STORMWATER MANAGEMENT AND EROSION & SEDIMENT CONTROL CALCULATIONS

Project Hercules

APPROVED

Stormwater Management Plan

Commonwealth of Virginia
DEQ Water Division
Northern Regional Office

Plan Reviewer: Synndal

Date: 12/18/2025

☐ Standard Approval

☒ Streamlined Approval

Prepared by:

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Prepared on: July 10, 2025

Revised: September 18, 2025

Revised: October 24, 2025

Revised: November 14, 2025

COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402057995
11/14/2025
PROFESSIONAL ENGINEER

O. DUAL COMBINED ADMINISTRATOR (DCA) CERTIFICATION

I hereby certify that I have reviewed the plans and hydrologic & hydraulic computations herein for compliance with the Stormwater Management Act and attendant regulations, the Erosion and Sediment Control Law and attendant regulations, and applicable DEQ guidance, and recommend the plans and computations for DEQ approval.

DCA Name: **Cutter Sydnor**

DCA Certification No.: **DCA0602**

Signature:

Date: **November 14, 2025**

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1. PROJECT DESCRIPTION

Kimley-Horn and Associates, Inc., serves as the engineering consultant who will be developing a Data Center facility in Appomattox, VA. The subject property is located off of Industrial Park Lane, Appomattox, VA. This project proposes **68.39** acres to be disturbed, of which **28.70** acres will be impervious.

This report evaluates the pre- and post-developed runoff characteristics of the subject property and contains the associated erosion and sediment control and stormwater management calculations. HydroCAD 10.2-5c was used for the analysis and determination of the pre- and post-developed runoff volume and rates. Rainfall intensities and durations were determined using NOAA's Atlas 14 precipitation frequency data server, and the precipitation data used is included in **Appendix D**.

1.1 Pre-Development Conditions

The existing site is mostly undeveloped forested/pasture area and is zoned master planned-industrial (M-IP). Per FEMA FIRM Map Panel 51011C0125C, most of the property is in Zone X, which is an area determined to be outside of a floodplain. Portions of the property are in Zone A which is an area determined to be within the 100-yr floodplain. NRCS data is dated June 25, 2025. The FEMA maps and NRCS soils report are shown in Appendices A and B, respectively.

The property generally drains from south to southwest to the Phelps Branch River through a series of natural channels, an existing pond,and existing wetlands. The Vera, VA 2022 and Appomattox, VA 2022 USGS maps are shown in **Appendix C**, and pre-developed drainage area maps are included in **Appendix G**. Pre-developed drainage areas to the downstream analysis points for flood and channel protection are included in **Appendix S**.

1.2 Post Development Conditions

The proposed project includes one permanent entrance and access road with curb and gutter, a substation, security guard area, data center building and associated parking and sidewalks, utilities, perimeter fencing, and SWM infrastructure construction. Where conflicting with the proposed improvements, any existing infrastructure will be removed as outlined in the plans.

Overall, the existing drainage patterns will be maintained in the post-developed condition. Stormwater ponds are proposed that function as temporary sediment basins as well as stormwater conveyance channels and diversions to direct and contain sediment-laden water during construction. These features will remain after construction is complete to detain and manage stormwater so that post-developed flow rates satisfy flood and channel protection criteria. The existing wetlands and natural streams will remain as-is. In the post developed condition, the existing forested/managed turf cover will be converted to a combination of impervious, managed turf, and brush land cover conditions. Refer to Stormwater Management section of this report for detailed post-developed drainage analysis. Post-development drainage area maps are included in **Appendix H**. Post-developed drainage areas to the downstream analysis points for flood and channel protection are included in **Appendix S**.

2. EROSION AND SEDIMENT CONTROL

Erosion and sediment control on this site is designed to meet the Virginia Stormwater Management Handbook standards. The project area consists of approximately **448.50** acres of which **68.39** acres will be disturbed. **28.70** acres of the disturbed area will be considered impervious. No other areas outside of the limits of disturbance will be disturbed with this part of the project.

Access to the site will be provided by two access drives; one from Industrial Park Lane off of Oakville Road, and the other from a private gravel road off of Richmond Highway.

Construction operations are expected to begin once the permitting process is complete. The state general permit from DEQ will be obtained prior to commencing any land disturbance activities. A copy of the contractor's stormwater pollution prevention plan shall be included with the application for the above permit. Construction is expected to be complete within twenty-four months of the commencement of land-disturbing activity.

Erosion and sediment control on this site is designed to meet the Virginia Stormwater Management Handbook. Sediment basin adequacy is met in **Appendix S** due to the 2-year flow exiting the basins being less than the pre-developed condition at each sediment basin point of analysis. The following Virginia standard erosion control devices will be employed with this project to protect adjacent and downstream properties from erosion and sedimentation:

C-SCM-03: Construction Entrance
Access to the site will be provided by two (2) site access points from Hickory Hill Road. One (1) new entrance is proposed at Hickory Hill Road on the northwestern side of the site near its intersection with Interstate 95. One (1) existing entrance located across from Old Ridge Road will be utilized to access the site. Both access points will utilize construction entrances during construction activities.

C-PCM-04: Super Silt Fence/Silt Fence
Super silt fence is proposed around the downstream limits of disturbance to filter sediment-laden runoff prior to leaving the site.

Silt fence is proposed along the downstream portions of the perimeter fencing along the limits of disturbance.

C-SCM-04: Storm Drain Inlet Protection
Storm drain inlet protection is proposed at all drain inlets proposed along the roadway to collect drainage from roadside ditches and select offsite areas.

C-SCM-05: Culvert Inlet Protection
Culvert inlet protection is proposed on the upstream side of all bypass culverts as a means of preventing sediment from entering in, accumulating, and being transferred by a bypass culvert.

C-ECM-04 Temporary Diversion Dike
Temporary diversion dikes are proposed to convey offsite areas to clean-water bypass locations.

C-ECM-05 Diversion

A channel constructed across a slope with a supporting earthen ridge on the lower side. The purpose of this practice is to reduce slope length and to intercept and divert stormwater runoff to stabilized outlets at non-erosive velocities.

C-ECM-06 Temporary Fill Diversion

A channel with a supporting ridge of soil on the lower side, constructed along the top of an active earth fill. Temporary fill diversions are used to divert storm runoff away from the unprotected slope of the fill to a stabilized outlet or sediment trapping facility.

C-ECM-07 Rock Check Dams

Rock check dams are proposed within the stormwater conveyance channels per the spacing requirements within the Virginia Stormwater Management Handbook.

C-SCM-11 Sediment Trap

Sediment traps are proposed to detain runoff and allow sediment to settle out prior to outfalling. The traps will be excavated and installed in Phase I of the erosion control plan. Sizing calculations and methodology for the traps per the Virginia Stormwater Handbook are included in **Appendix E**.

C-SCM-12 Sediment Basin

Stormwater ponds will be installed throughout the site that function as sediment basins during construction to detain runoff and allow sediment to settle out prior to outfalling. The ponds will be excavated and installed in Phase I of the erosion control plan. These ponds will remain permanently for stormwater management purposes. Sizing calculations for the basins per the Virginia Stormwater Handbook are included in **Appendix E**. Calculations proving sediment basin adequacy for MS-19 are included in **Appendix S.** Hydrographs for Phase I and Phase II conditions are included in **Appendix J**.

C-ECM-15 Outlet Protection

Outlet protection is proposed at the outfall of each culvert pipe to dissipate concentrated flows. Sizing calculations for the riprap outlet protection aprons are included in **Appendix F**.

C-SSM-09/10: Temporary and Permanent Site Stabilization

Temporary and permanent seeding are specified in areas where topsoil may be stockpiled. In other areas, with the exception of limits of wetlands and streams, gravel may be applied for stabilization per details within the plans and based on recommendations from the geotechnical engineer.

Refer to this project's associated site plan package for erosion and sediment control plans, narratives, construction sequences, and details.

3. STORMWATER MANAGEMENT

Stormwater management for this facility is being designed to meet the stormwater quantity requirements and stormwater quality requirements of the Virginia Part IIB stormwater regulations as defined in 9VAC25-875.

The property has multiple streams, floodplain, and wetlands on-site or directly adjacent to the site. Erosion control and stormwater conveyance channels are proposed upstream of these existing features, and drainage areas that drain to these features are addressed below. The outfall points of these channels just upstream of the natural resources serve as the site points of analysis (POA) in both the existing and proposed conditions. These POA points are set at the limits of disturbance line which is based on proposed improvements required. The drainage pattern in the existing condition is maintained in the post developed condition to the extent practical.

The existing land cover analysis is performed via historic aerials and topographic data. The site is mostly pasture land with a few forested areas, and an impervious hiking trail. This data is used to calculate the existing curve number at each point of analysis. The curve number is based on land cover and hydrologic soil group. Existing land cover tabulations for calculating curve numbers are found in **Appendix G**.

The proposed land cover analysis is performed by applying the post developed condition of either impervious cover, brush, or managed turf within the limits of disturbance and limits of analysis. The HSG classification was adjusted from the pre-development HSG by one factor to represent the ultimate development condition due to land disturbing activities during construction. This is based on the methodology outlined in VDEQ Stormwater Management Handbook. Drainage areas associated with the proposed perimeter fencing and linear utilities do not have the HSG adjustment since there is not significant earthwork proposed in these areas. Impervious areas include access roads, parking lots, building pads, permanent wet pond normal pools, and riprap outlet protection. Detailed construction and conversion sequences, as well as seed mix information can be found on the ESC and SWM Notes and the Planting Plan sheets.

All ditches, storm structures, and pipes proposed in the plan will remain as permanent features. Supporting design calculations for the sizing of these features is included in several appendices of this report, including **Appendices M, N, O, P, Q and R**.

Note that topographical data and drainage delineations represented on the associated design plans are deemed accurate, based on the supporting data.

3.1 Stormwater Quantity

The analysis limits for stormwater quantity compliance at each point of analysis (POA) is defined by the limits of disturbance, with the exception of linear improvements such as perimeter fencing and utilities. In these instances, if the existing land cover is pasture and will be converted to managed turf after the proposed improvements, the area is excluded from the analysis limits. Drainage areas outside of the limits of disturbance which drain to a POA are included within the analysis limits. Linear

improvements in which the existing land cover is forested will be converted to brush after the proposed improvements, satisfying sheet flow requirements. The downstream offsite analysis to the limits of analysis for channel and flood protection for each POA is provided in **Appendix S**. The table and accompanying narrative discussion below define the water quantity compliance for each drainage area on the site and the compliance methods described in 9VAC25-875-600. Drainage areas with "N/A" for channel and flood protection criteria are rerouted to a different drainage area with the proposed improvements.

DRAINAGE AREA COMPLIANCE METHOD SUMMARY							
DRAINAGE AREA LABEL	CHANNEL PROTECTION		FLOOD PROTECTION			SHEET FLOW	ADEQUATE OUTFALL
	9VAC25-875-600.B.1.a	9VAC25-875-600.B.3.a	9VAC25-875-600.C.1	9VAC25-875-600.C.2.b	9VAC25-875-600.C.3.c	9VAC25-875-600.D	
DA-01	N/A	N/A	N/A	N/A	N/A		N/A
DA-02	N/A	N/A	N/A	N/A	N/A		N/A
DA-03	N/A	N/A	N/A	N/A	N/A		N/A
DA-04		X	X		X		Stream/Wetland
DA-05		X		X			Stream/Wetland
DA-06		X		X			Stream/Wetland
DA-07	N/A	N/A	N/A	N/A	N/A		N/A
DA-08	N/A	N/A	N/A	N/A	N/A		N/A
DA-09	N/A	N/A	N/A	N/A	N/A		N/A
DA-10	N/A	N/A	N/A	N/A	N/A		N/A
DA-11	N/A	N/A	N/A	N/A	N/A		N/A
DA-12	N/A	N/A	N/A	N/A	N/A		N/A
DA-13	N/A	N/A	N/A	N/A	N/A		N/A
DA-14	N/A	N/A	N/A	N/A	N/A		N/A
DA-15		X		X			Stream/Wetland
FENCE-01						X	Stream/Wetland
FENCE-02						X	Stream/Wetland
FENCE-03						X	Stream/Wetland
FENCE-04						X	Stream/Wetland
FENCE-05						X	Stream/Wetland
TEMP-01 THROUGH TEMP-08	TEMPORARY WORKSPACE ONLY						
	**NOTE: DRAINAGE AREAS WITH "N/A" FOR CHANNEL AND FLOOD PROTECTION CRITERIA ARE REROUTED TO A DIFFERENT DRAINAGE AREA WITH THE PROPOSED IMPROVEMENTS						

Code references for compliance are defined as follows:

- 600.B.3.a – The discharge from this point of analysis (POA) is released into a stormwater conveyance system and is equal to or less than the allowable 1-year flow as calculated using the Energy Balance method, therefore satisfying channel protection requirements.
  For detailed compliance information: see **Appendix G and H** for pre- and post-development drainage area tabulations and maps used for calculations. See **Appendix I** for Tc tabulations. See **Appendix J** for HydroCAD calculations used to calculate the pre- and post-development 1-year flow and volumes. See **Appendix K** for a summary of the Energy Balance calculations. See **Appendix S** for the detailed analysis of downstream cross sections to the limits of analysis for Channel Protection.

- 600.C.1 and 600.C.3.c – The discharge from this POA is released into a stormwater conveyance system that does not experience localized flooding and is adequately conveyed to the limits of analysis as defined in 600.C.3, therefore satisfying flood protection requirements.
  For detailed compliance information: see **Appendix G and H** for pre- and post-development

drainage area tabulations and maps used for calculations. See **Appendix I** for Tc tabulations and **Appendix J** for HydroCAD calculations used to calculate the pre- and post-development 2- and 10-year flow and water surface elevations. See **Appendix S** for the detailed analysis of downstream cross sections to the limits of analysis for Flood Protection.

- 600.C.2.b – The discharge from this POA is released into a stormwater conveyance system that experiences localized flooding prior to the limit of analysis defined in 600.C.3 and is equal to or less than the pre-development 10-year peak flow, therefore satisfying flood protection requirements. For detailed compliance information: see **Appendix G and H** for pre- and post-development drainage area tabulations and maps used for calculations. See **Appendix I** for Tc tabulations. See **Appendix J** for HydroCAD calculations showing the pre- and post-development flows released at the POA. See **Appendix S** for the detailed analysis of downstream cross sections for Flood Protection.

- 600.D – The discharge from this POA is released as decreased volumes of sheet flow, and therefore no further water quantity controls are required.

A more detailed water quantity calculation summary is provided in **Appendix K**, which lists 1- and 10-year peak flows and volumes per drainage area as applicable based on compliance method.

The installation of stormwater ponds and tie-out fill slopes generally creates small “fringe” areas downstream of these improvements and do not drain into the proposed stormwater features. These areas decrease significantly from the pre-development area to a negligible size in the post-development condition. Therefore, calculations have not been provided for these areas, as it is assumed the significant decrease in area will reduce the volume of flow leaving the site at these locations, satisfying 9VAC25-870-600.B.3.a. Instead, these areas are conservatively included in the overall basin areas in the post-development condition.

Several drainage areas are listed with an “-O” suffix in the drainage area maps and tabulations but are not listed above. These areas are offsite areas that run-on to the project, so their compliance is satisfied with compliance of the downstream, on-site parent drainage area. The flow from these offsite areas is accounted for in calculations, routings, and other calculations as necessary and detailed in appendices.

3.2 Stormwater Quality Treatment

The analysis limits for stormwater quality compliance includes the entire limits of disturbance. To analyze water quality treatment compliance with the Virginia stormwater code, this project was analyzed as a “New-Development” project. Managed turf and impervious areas were tabulated for post-developed conditions and input into the VRRM spreadsheet. For purposes of the water quality calculations the site access roads, equipment pads, racking posts and riprap outlet protection are considered impervious areas. Wet pond treatment volumes are sized accounting for VSMH Section A.3.7.2, requiring a hydrologic soil group adjustment for all quantity and volume calculations.

The proposed site improvements require a phosphorus reduction of approximately **35.03 pounds** per year. The entirety of the phosphorus reduction required for this project will be provided through three level 2 wet ponds proposed on site. All ponds have been designed in accordance with Chapter 8 of the Virginia Stormwater Management Handbook.

Detailed stormwater quality calculations are included in **Appendix L**.

Appendix A – FEMA Map Panels

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 17. **Horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov/.

BASE MAP SOURCE: Base map files were obtained in digital spatial data format from the U. S. Geological Survey and the U. S. Census Bureau. Political boundary and road centerline files were downloaded from the 2000 TIGER/Line files and 2002 digital orthophotographs were provided by the Virginia Geographic Network Division of its Department of Technology Planning (VGIN). Adjustments were made to specific base map features to align them to 1:400 scale VGIN orthophotos.

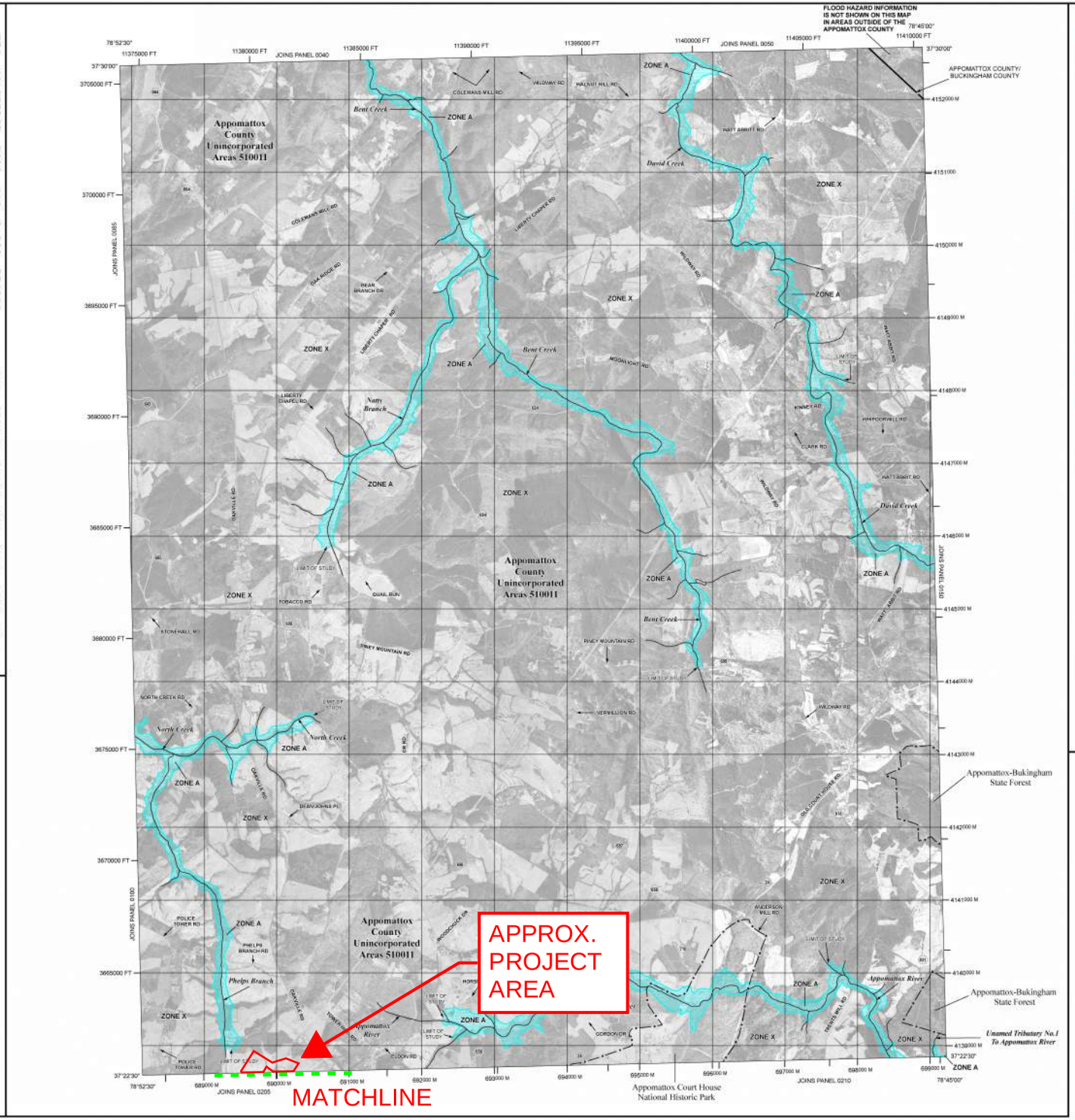
Based on the above mentioned digital orthophotographs, this map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A — No Base Flood Elevations determined.
- ZONE AE — Base Flood Elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAS)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000 M — 1000-meter Universal Transverse Mercator grid values, zone 17
- 6000000 FT — 5000-foot grid ticks: Virginia State Plane coordinate system (FIPSZONE 4502), Lambert Conformal Conic projection
- DX5510 x — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 2, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0125C

FIRM
FLOOD INSURANCE RATE MAP

APPOMATTOX COUNTY, VIRGINIA AND INCORPORATED AREAS

PANEL 125 OF 350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
APPOMATTOX COUNTY	510011	0125	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
51011C0125C

EFFECTIVE DATE
JANUARY 2, 2008

Federal Emergency Management Agency

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Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

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Silver Spring, Maryland 20910
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BASE MAP SOURCE: Base map files were obtained in digital spatial data format from the U. S. Geological Survey and the U. S. Census Bureau. Political boundary and road centerline files were downloaded from the 2000 TIGER/Line files and 2002 digital orthophotographs were provided by the Virginia Geographic Network Division of its Department of Technology Planning (VGIN). Adjustments were made to specific base map features to align them to 1:400 scale VGIN orthophotos.

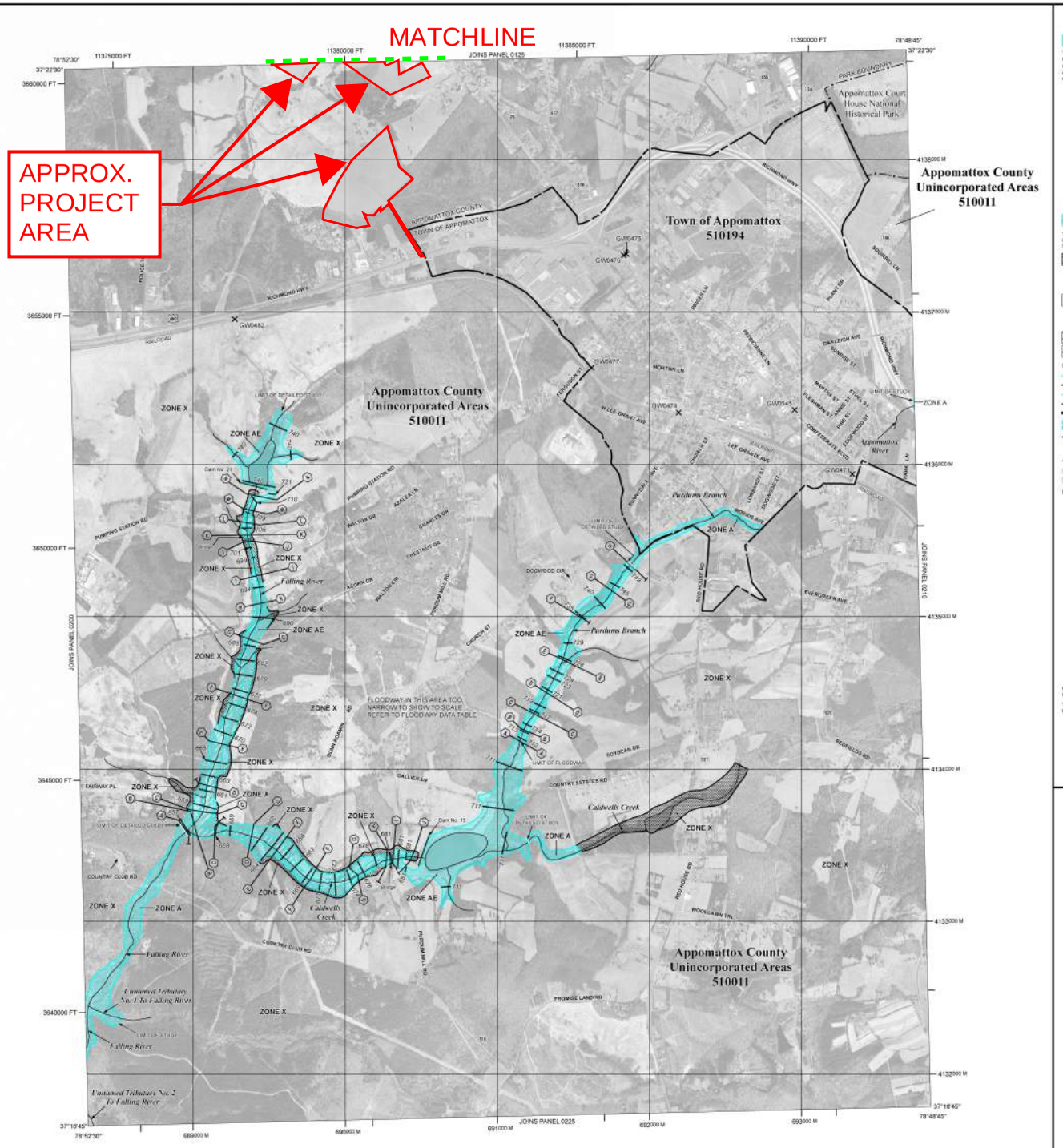
Based on the above mentioned digital orthophotographs, this map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A — No Base Flood Elevations determined.
- ZONE AE — Base Flood Elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAS)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000 M — 1000-meter Universal Transverse Mercator grid values, zone 17
- 600000 FT — 5000-foot grid ticks: Virginia State Plane coordinate system (FIPSZONE 4502), Lambert Conformal Conic projection
- DX5510 x — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 2, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0205C

FIRM
FLOOD INSURANCE RATE MAP

APPOMATTOX COUNTY, VIRGINIA
AND INCORPORATED AREAS

PANEL 205 OF 350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
APPOMATTOX COUNTY	510011	0205	C
APPOMATTOX, TOWN OF	510194	0205	C

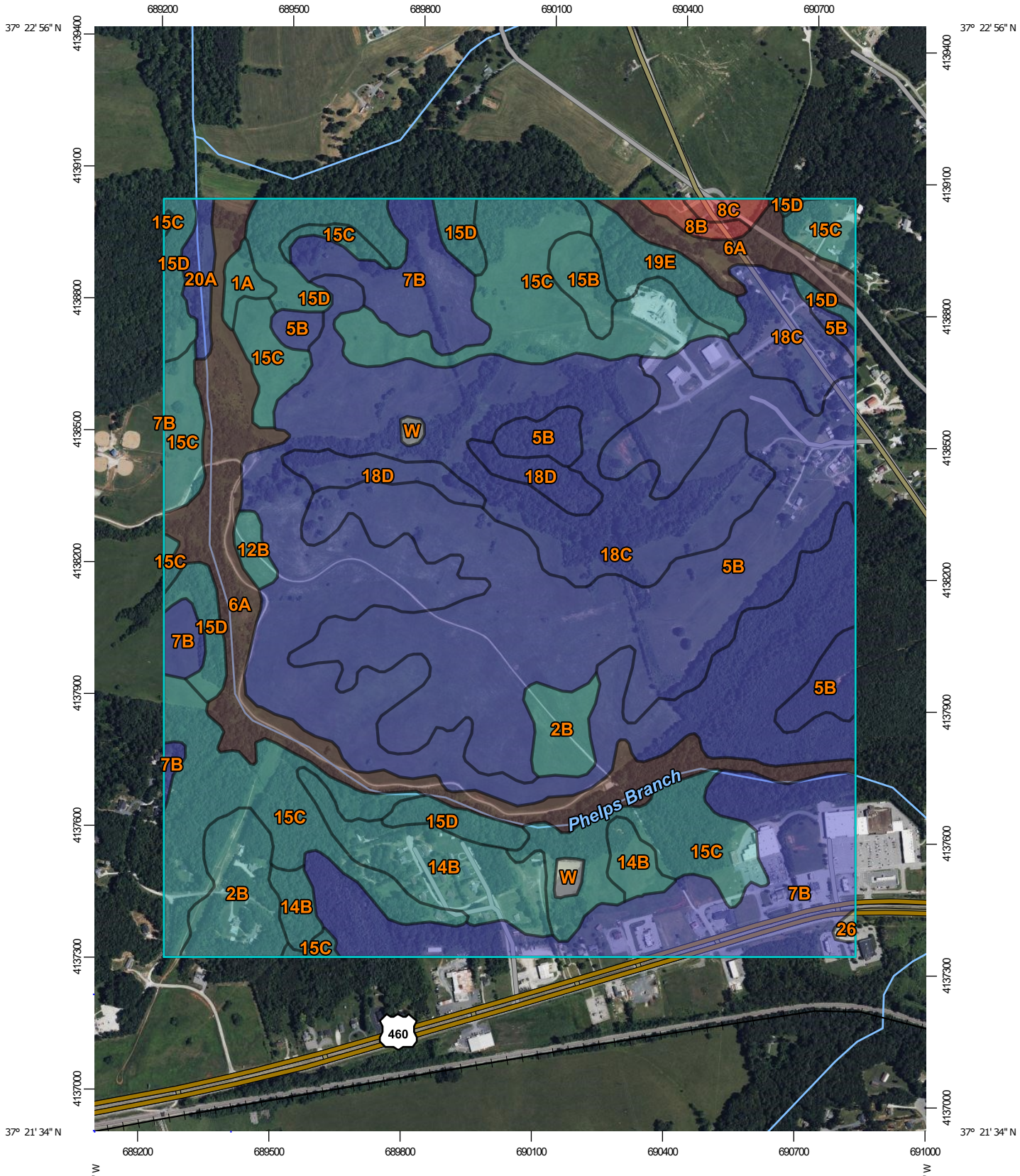
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
51011C0205C

EFFECTIVE DATE
JANUARY 2, 2008

Federal Emergency Management Agency

Appendix B – NRCS Soil Description and Map



Map Scale: 1:12,300 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 150 300 600 900

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Appomattox County, Virginia
Survey Area Data: Version 22, Aug 28, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 19, 2022—Jul 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1A	Altavista loam, 0 to 2 percent slopes, occasionally flooded	C	2.7	0.4%
2B	Appomattox-Cullen complex, 2 to 7 percent slopes	C	21.1	3.1%
5B	Cecil sandy loam, 2 to 7 percent slopes	B	135.2	20.0%
6A	Chewacla loam, 0 to 2 percent slopes, frequently flooded	B/D	58.7	8.7%
7B	Cullen clay loam, 2 to 7 percent slopes	B	75.3	11.1%
8B	Iredell loam, 2 to 7 percent slopes	D	2.6	0.4%
8C	Iredell loam, 7 to 15 percent slopes	D	2.2	0.3%
12B	Mattaponi-Cecil complex, 2 to 7 percent slopes	C	2.6	0.4%
14B	Mecklenburg loam, 2 to 7 percent slopes	C	27.4	4.0%
15B	Mecklenburg-Poindexter complex, 2 to 7 percent slopes	C	5.3	0.8%
15C	Mecklenburg-Poindexter complex, 7 to 15 percent slopes	C	110.1	16.3%
15D	Mecklenburg-Poindexter complex, 15 to 25 percent slopes	C	31.3	4.6%
18C	Pacolet-Louisburg complex, 7 to 15 percent slopes	B	172.8	25.6%
18D	Pacolet-Louisburg complex, 15 to 25 percent slopes	B	12.1	1.8%
19E	Poindexter gravelly silt loam, 25 to 60 percent slopes	C	9.8	1.5%
20A	Riverview loam, 0 to 2 percent slopes, occasionally flooded	B	4.5	0.7%
26	Udorthents-Urban land complex, 0 to 15 percent slopes		0.6	0.1%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
W	Water		2.0	0.3%
Totals for Area of Interest			**676.3**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix C – USGS Topo Map

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

VERA QUADRANGLE
VIRGINIA
7.5-MINUTE SERIES

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 17S

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, August 2018 - August 2018
Roads.....U.S. Census Bureau, 2016 - 2021
Names.....GNIS, 1979 - 2022
Hydrography.....National Hydrography Dataset, 2000 - 2018
Contours.....National Elevation Dataset, 2017
Boundaries.....Multiple sources; see metadata file 2019 - 2021

Wetlands.....FWS National Wetlands Inventory 1984 - 2012

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
PB
Grid Zone Designation 17S

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
0.5 0 0.5 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

QUADRANGLE LOCATION

ADJOINING QUADRANGLES

1	2	3
4		5
6	7	8

1 Buffalo Ridge
2 Gladstone
3 Saint Joy
4 Stonewall
5 Holiday Lake
6 Concord
7 Appomattox
8 Pamplin

ROAD CLASSIFICATION

Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

VERA, VA
2022

NSN
NGA REF NO. USGS24616135

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

APPOMATTOX QUADRANGLE
VIRGINIA - APPOMATTOX COUNTY
7.5-MINUTE SERIES

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 17S
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, August 2018 - August 2018
Roads.....U.S. Census Bureau, 2016 - 2021
Names.....GNIS, 1979 - 2022
Hydrography.....National Hydrography Dataset, 2000 - 2018
Contours.....National Elevation Dataset, 2008
Boundaries.....Multiple sources; see metadata file 2019 - 2021
Wetlands.....FWS National Wetlands Inventory 1984

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
MN 6°23' 107 MILS
GN 1°20' 24 MILS
U.S. National Grid
100,000 - m Square ID
PB
Grid Zone Designation 17S

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
0.5 0 0.5 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

VIRGINIA
QUADRANGLE LOCATION

ADJOINING QUADRANGLES
1 2 3
4 5
6 7 8
1 Stonewall
2 Vera
3 Holiday Lake
4 Concord
5 Pamplin
6 Mike
7 Red House
8 Madisonville

ROAD CLASSIFICATION
Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

APPOMATTOX, VA
2022

NSN 7643013501962
NGA REF NO. 3501962

Appendix D – Precipitation Data

NOAA Atlas 14, Volume 2, Version 3 APPOMATTOX
Station ID: 44-0243
Location name: Appomattox, Virginia, USA*
Latitude: 37.3558°, Longitude: -78.8314°
Elevation:
Elevation (station metadata): 910 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.346** (0.313-0.383)	**0.410** (0.371-0.454)	**0.482** (0.434-0.533)	**0.542** (0.488-0.598)	**0.609** (0.547-0.672)	**0.660** (0.590-0.727)	**0.707** (0.628-0.779)	**0.750** (0.662-0.826)	**0.798** (0.699-0.882)	**0.838** (0.728-0.928)
10-min	**0.553** (0.499-0.612)	**0.655** (0.593-0.726)	**0.771** (0.696-0.853)	**0.867** (0.781-0.957)	**0.971** (0.872-1.07)	**1.05** (0.939-1.16)	**1.12** (0.999-1.24)	**1.19** (1.05-1.31)	**1.26** (1.11-1.40)	**1.32** (1.15-1.46)
15-min	**0.691** (0.624-0.765)	**0.824** (0.745-0.912)	**0.976** (0.880-1.08)	**1.10** (0.988-1.21)	**1.23** (1.10-1.36)	**1.33** (1.19-1.46)	**1.42** (1.26-1.56)	**1.50** (1.32-1.65)	**1.59** (1.39-1.76)	**1.66** (1.44-1.84)
30-min	**0.947** (0.856-1.05)	**1.14** (1.03-1.26)	**1.39** (1.25-1.53)	**1.59** (1.43-1.75)	**1.82** (1.64-2.01)	**2.00** (1.79-2.21)	**2.18** (1.93-2.40)	**2.33** (2.06-2.57)	**2.53** (2.21-2.80)	**2.68** (2.33-2.97)
60-min	**1.18** (1.07-1.31)	**1.43** (1.29-1.58)	**1.78** (1.60-1.97)	**2.07** (1.86-2.28)	**2.43** (2.18-2.68)	**2.72** (2.43-2.99)	**3.00** (2.66-3.30)	**3.27** (2.89-3.61)	**3.63** (3.18-4.01)	**3.91** (3.40-4.34)
2-hr	**1.40** (1.25-1.56)	**1.69** (1.51-1.88)	**2.11** (1.90-2.36)	**2.48** (2.22-2.77)	**2.96** (2.63-3.28)	**3.35** (2.96-3.71)	**3.74** (3.28-4.14)	**4.14** (3.61-4.59)	**4.68** (4.03-5.19)	**5.11** (4.36-5.68)
3-hr	**1.51** (1.35-1.69)	**1.82** (1.64-2.04)	**2.28** (2.04-2.55)	**2.68** (2.39-2.99)	**3.19** (2.83-3.55)	**3.61** (3.19-4.02)	**4.04** (3.54-4.48)	**4.46** (3.89-4.96)	**5.04** (4.34-5.61)	**5.50** (4.69-6.14)
6-hr	**1.89** (1.70-2.12)	**2.28** (2.04-2.56)	**2.84** (2.54-3.19)	**3.35** (2.99-3.75)	**4.02** (3.56-4.50)	**4.60** (4.04-5.14)	**5.20** (4.53-5.80)	**5.84** (5.03-6.50)	**6.72** (5.70-7.48)	**7.47** (6.25-8.32)
12-hr	**2.33** (2.11-2.62)	**2.81** (2.53-3.16)	**3.52** (3.15-3.95)	**4.18** (3.73-4.68)	**5.08** (4.49-5.67)	**5.88** (5.15-6.54)	**6.73** (5.83-7.47)	**7.65** (6.54-8.49)	**8.98** (7.54-9.98)	**10.2** (8.38-11.3)
24-hr	**2.83** (2.59-3.14)	**3.43** (3.14-3.80)	**4.39** (4.01-4.86)	**5.19** (4.73-5.74)	**6.39** (5.77-7.04)	**7.41** (6.66-8.16)	**8.53** (7.60-9.38)	**9.77** (8.62-10.7)	**11.6** (10.1-12.7)	**13.2** (11.3-14.4)
2-day	**3.35** (3.07-3.67)	**4.06** (3.73-4.44)	**5.15** (4.72-5.65)	**6.06** (5.54-6.64)	**7.36** (6.69-8.07)	**8.46** (7.65-9.26)	**9.65** (8.66-10.6)	**10.9** (9.73-12.0)	**12.8** (11.3-14.0)	**14.3** (12.5-15.8)
3-day	**3.55** (3.25-3.90)	**4.30** (3.94-4.72)	**5.46** (5.00-5.99)	**6.41** (5.85-7.03)	**7.79** (7.07-8.54)	**8.95** (8.08-9.80)	**10.2** (9.15-11.2)	**11.5** (10.3-12.6)	**13.5** (11.9-14.8)	**15.1** (13.2-16.6)
4-day	**3.75** (3.44-4.13)	**4.54** (4.16-4.99)	**5.76** (5.28-6.33)	**6.77** (6.17-7.43)	**8.22** (7.46-9.02)	**9.44** (8.52-10.3)	**10.7** (9.63-11.8)	**12.2** (10.8-13.3)	**14.2** (12.5-15.6)	**15.9** (13.9-17.5)
7-day	**4.33** (3.99-4.70)	**5.21** (4.80-5.66)	**6.51** (5.99-7.07)	**7.58** (6.96-8.22)	**9.11** (8.30-9.87)	**10.4** (9.41-11.3)	**11.7** (10.6-12.7)	**13.2** (11.8-14.3)	**15.3** (13.5-16.6)	**17.0** (14.9-18.5)
10-day	**4.92** (4.56-5.32)	**5.90** (5.46-6.39)	**7.29** (6.74-7.88)	**8.41** (7.75-9.10)	**10.0** (9.16-10.8)	**11.3** (10.3-12.2)	**12.6** (11.5-13.7)	**14.1** (12.7-15.2)	**16.1** (14.4-17.4)	**17.7** (15.7-19.3)
20-day	**6.56** (6.12-7.07)	**7.82** (7.29-8.41)	**9.45** (8.80-10.2)	**10.7** (9.97-11.5)	**12.5** (11.5-13.4)	**13.8** (12.8-14.8)	**15.2** (14.0-16.3)	**16.6** (15.2-17.9)	**18.5** (16.8-20.0)	**20.0** (18.1-21.6)
30-day	**8.06** (7.59-8.57)	**9.56** (9.00-10.2)	**11.3** (10.6-12.0)	**12.6** (11.9-13.4)	**14.4** (13.5-15.2)	**15.7** (14.7-16.6)	**16.9** (15.8-18.0)	**18.2** (16.9-19.4)	**19.8** (18.4-21.1)	**21.1** (19.4-22.5)
45-day	**10.1** (9.56-10.7)	**11.9** (11.3-12.6)	**13.9** (13.2-14.7)	**15.4** (14.6-16.3)	**17.4** (16.4-18.3)	**18.8** (17.7-19.8)	**20.1** (18.9-21.3)	**21.5** (20.1-22.7)	**23.1** (21.6-24.6)	**24.4** (22.6-25.9)
60-day	**11.9** (11.3-12.6)	**14.0** (13.3-14.8)	**16.2** (15.4-17.1)	**17.8** (16.9-18.8)	**19.9** (18.8-20.9)	**21.4** (20.2-22.5)	**22.8** (21.5-24.0)	**24.2** (22.7-25.5)	**25.9** (24.3-27.4)	**27.1** (25.3-28.8)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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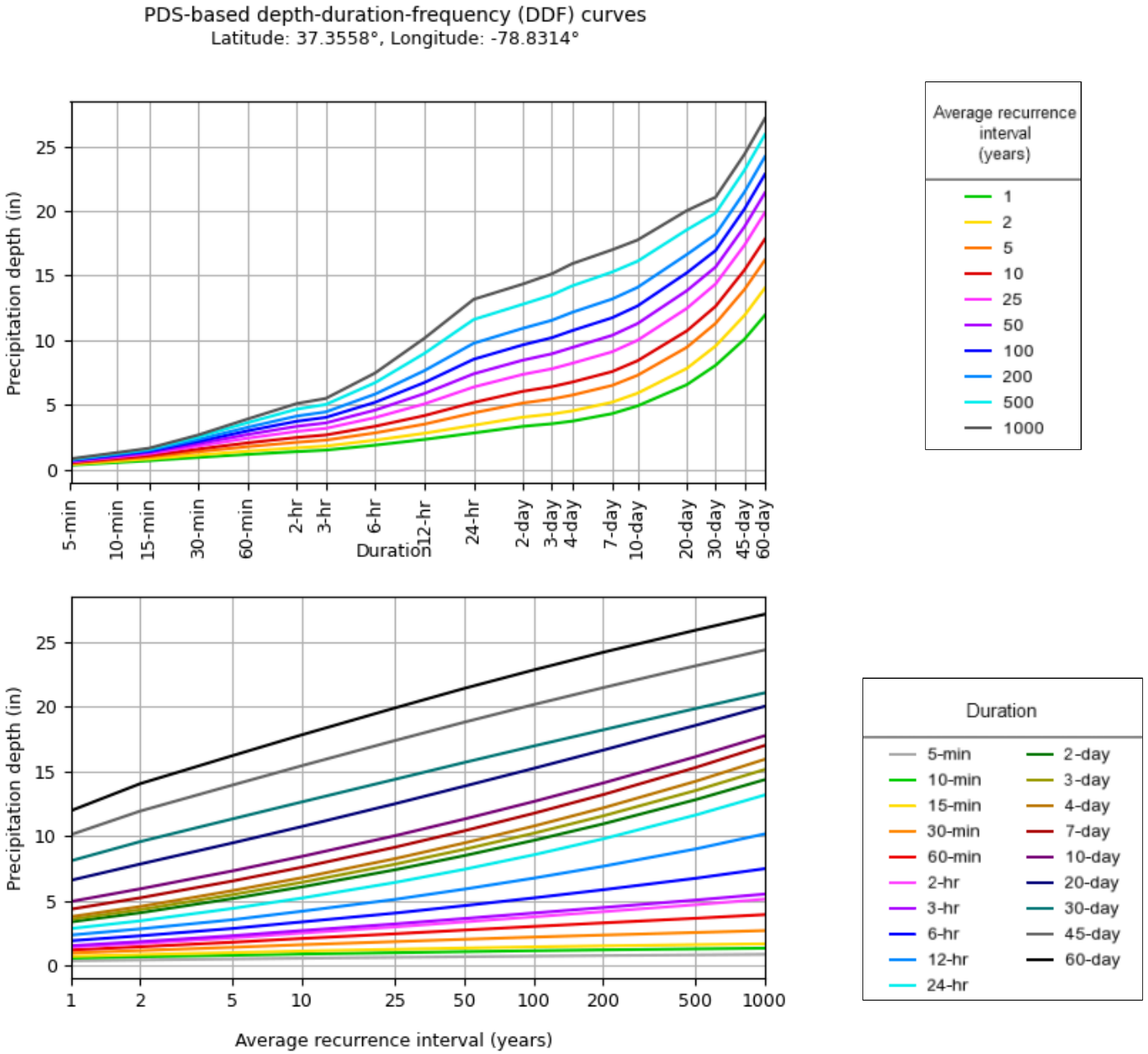
PF graphical



NOAA Atlas 14, Volume 2, Version 3 Created (GMT): Wed Jun 25 14:44:41 2025

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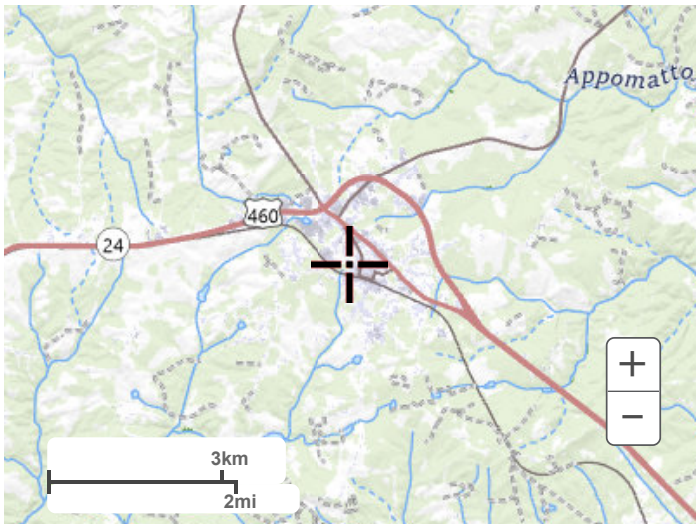
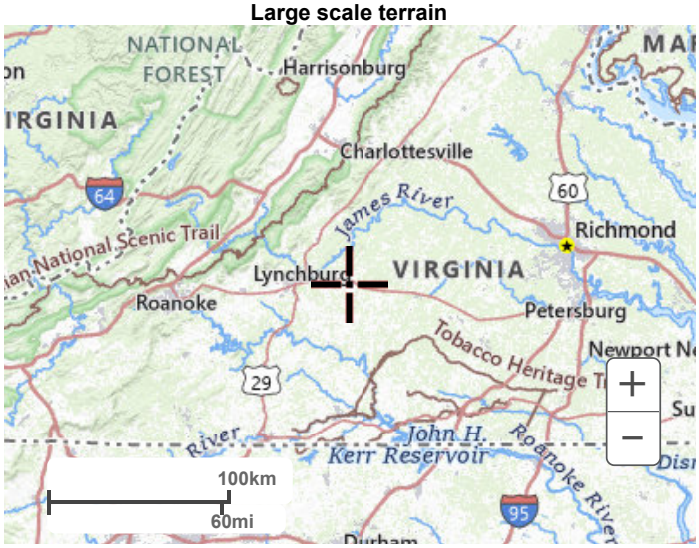
Maps & aerials

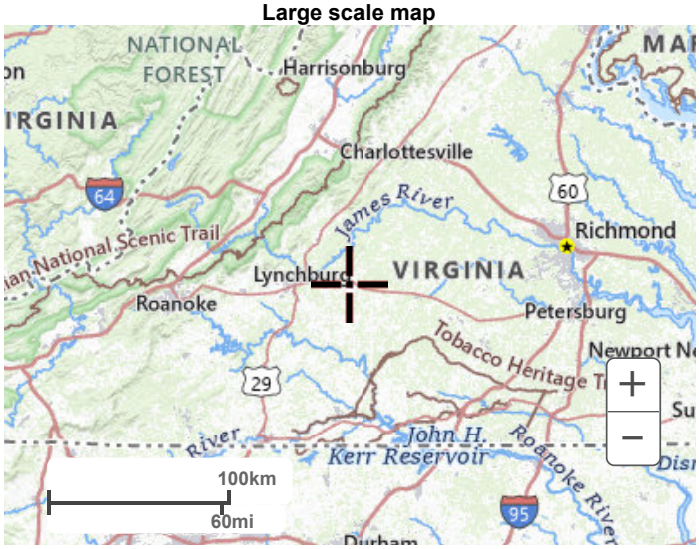
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Appendix E – Sediment Trap & Basin Design

Kimley»Horn

Project Name: PROJECT HERCULES
KHA Project #: 113706001
Designed by: CMA Date: 10/23/2025
Revised by: Date:
Revised by: Date:

SEDIMENT BASIN DESIGN SUMMARY TABLE

BASIN INFORMATION				WET STORAGE				DRY STORAGE		RISER							DEWATERING			SPILLWAY			EMBANKMENT		BAFFLE			BARREL				
SEDIMENT BASIN NO.	SEDIMENT BASIN CONDITION	DRAINAGE AREA	BOTTOM OF BASIN ELEVATION	VOLUME REQUIRED	VOLUME PROVIDED	PERMANENT POOL ELEVATION	SEDIMENT CLEANOUT ELEVATION	VOLUME REQUIRED	VOLUME PROVIDED	DESIGN RISER DIAMETER	RISER SHAPE	CONSTRUCTION RISER SIZE	RISER CREST ELEVATION	RISER MATERIAL	MINIMUM WEIGHT OF RISER	ANTI-VORTEX DEVICE DIAMETER	DEWATERING DEVICE DIAMETER	DEWATERING TIME	DEWATERING DEVICE ELEVATION	EMERGENCY SPILLWAY ELEVATION	EMERGENCY SPILLWAY WIDTH	25-YR STORM WATER SURFACE ELEVATION	TOP OF EMBANKMENT ELEVATION	TOP OF EMBANKMENT WIDTH	BAFFLE LENGTH	TOP OF BAFFLE ELEVATION	FLOWLENGTH TO WIDTH RATIO	PIPE LENGTH	PIPE DIAMETER	PIPE MATERIAL	INVERT IN	INVERT OUT
		AC	FT	CF	CF	FT	FT	CF	CF	IN		IN	FT		LBS	IN	IN	HR	FT	FT	FT	FT	FT	FT	FT	FT		FT	IN		FT	FT
SB-A	PERM	27.86	707.00	50,399	145,324	711.00	710.00	50,399	307,894	(1) 60	Circular	(1) 60	713.50	RCP	9,797	96	2.9	56.7	711.00	715.00	15	714.49	718.00	8	166	714.00	1.98	180	(1) 30	RCP	707.00	706.09
SB-B	PERM	7.66	802.00	13,857	13,804	805.00	804.00	13,857	51,400	(1) 60	Circular	(1) 60	807.50	RCP	22,299	96	1.1	107.6	805.00	808.60	14	808.07	810.00	15	115	808.00	3.79	109	(1) 24	RCP	792.94	782.10
SB-C	PERM	25.05	760.00	45,315	72,062	764.00	763.00	45,315	211,954	(1) 60	Circular	(1) 60	767.60	RCP	11,181	96	3.0	39.7	764.00	769.35	24	768.82	771.00	8	107	768.10	2.26	293	(1) 30	RCP	760.00	758.18

*25-yr storm water surface elevation corresponds to the Ultimate Post Development condition which is more restrictive than the Phase I E&S (bare earth) condition

DEWATERING CALCULATION BASED ON C-SCM-12 APPENDIX A SECTION XIII

SEDIMENT BASIN NO.	A: FLOW AREA OF ORIFICE	Q: FLOW THROUGH ORIFICE	D: DEWATERING DEVICE DIAMETER	H: AVERAGE DRIVING HEAD	DRAWDOWN TIME
	SF	CFS	IN	FT	HR
SB-A	0.0459	0.247	2.9	1.25	56.73
SB-B	0.0066	0.036	1.1	1.25	107.56
SB-C	0.0491	0.317	3.0	1.80	39.72

Kimley»Horn

Project Name: PROJECT HERCULES
KHA Project #: 113706001
Designed by: STM **Date:** 10/23/2025
Revised by: #REF! **Date:** #REF!
Revised by: #REF! **Date:** #REF!

SEDIMENT TRAP DESIGN SUMMARY TABLE

				WET STORAGE			DRY STORAGE			EMBANKMENT		DIMENSIONS				
SEDIMENT TRAP NO.	SEDIMENT TRAP CONDITION	DRAINAGE AREA	BOTTOM OF TRAP ELEVATION	VOLUME REQUIRED	VOLUME PROVIDED	BASE OF OUTLET ELEVATION	VOLUME REQUIRED	VOLUME PROVIDED	TOP OF OUTLET ELEVATION	TOP OF EMBANKMENT ELEVATION	TOP OF EMBANKMENT WIDTH	WIDTH	LENGTH	SIDE SLOPES	OUTLET LENGTH	GRADED OPENING
N/A	N/A	AC	FT	CF	CF	FT	CF	CF	FT	FT	FT	FT	FT	N/A	FT	FT
ST-1	TEMP	2.87	730.50	5,192	6,591	732.00	5,192	8,491	733.50	734.50	8	40	100	3:1	17	22
ST-2	TEMP	1.62	751.00	2,931	3,619	752.50	2,931	5,134	754.00	755.00	8	25	80	3:1	10	15
ST-3	TEMP	2.96	766.50	5,355	9,391	768.00	5,355	11,508	769.50	770.50	8	61	95	3:1	18	23
ST-4	TEMP	2.27	756.00	4,106	6,362	757.50	4,106	8,037	759.00	760.00	8	60	65	3:1	14	19

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VIRGINIA TEMPORARY SEDIMENT TRAP DESIGN CALCULATIONS

Project Information

Project Name: PROJECT HERCULES — Drainage Area: ST-1
KHA Project #: 113706001
Designed by: STM — Date: 10/23/2025
Revised by: #REF! — Date: #REF!
Revised by: #REF! — Date: #REF!

Sediment Trap or Basin designs are based on Phase 1

Sediment Trap Condition: TEMP

Drainage Area (ac) =	2.87	
Disturbed Area (ac) =	2.87	
Runoff Coefficient (C) =	0.50	
Time of Concentration =	5.00	
2-yr Rainfall Intensity "i" (in/hr)* =	4.93	
25-yr Rainfall Intensity "i" (in/hr)* =	7.32	
Flow (Q_2) (cfs) =	7.1	(Q=c*i*drainage area)
Flow (Q_{25}) (cfs) =	10.5	(Q=c*i*drainage area)
Required Storage (cf) =	10,384	(134 cy per acre of acre of drainage)
Required "Wet" Storage (cf) =	5,192	(67 cy per acre of acre of drainage)
Required "Dry" Storage (cf) =	5,192	(67 cy per acre of acre of drainage)

Storage Dimensions:

Trap Side Slopes (X : 1) = 3.0 (2:1 max side slopes)

	Elev (ft)	Area (SF)	Cumulative Volume (CF)
Bottom of Trap	730.50	*3,801*	*0*
	731.00	*4,188*	*1,997*
	731.50	*4,590*	*4,192*
Base of Outlet	732.00	*5,005*	*6,591*
	732.50	*5,434*	*9,200*
	733.00	*5,878*	*12,028*
Top of Outlet	733.50	*6,335*	*15,082*
	734.00	*6,807*	*18,367*
Top of Trap	734.50	*7,292*	*21,892*

Designed Storage Elevation (ft)=	733.50	
Designed Total Storage Volume (cf)=	15,082	**O.K. > Minimum Required Storage**
Designed 'Wet' Storage Volume (cf)=	6,591	**O.K. > Minimum Required Storage**
Designed 'Dry' Storage Volume (cf)=	8,491	**O.K. > Minimum Required Storage**

Trap Dimensions:

Width (ft) =	40		
Length (ft) =	100		
Embankment Width (ft) =	8.0		
Side Slopes =	3:1		
Outlet Length =	17	ft (6* Drainage Area, ac)	(VA SMH 1.1 - Table C-SCM-11-1)
Graded Opening	22	ft	

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VIRGINIA TEMPORARY SEDIMENT TRAP DESIGN CALCULATIONS

Project Information

Project Name: PROJECT HERCULES — Drainage Area: ST-2
KHA Project #: 113706001
Designed by: STM — Date: 10/23/2025
Revised by: #REF! — Date: #REF!
Revised by: #REF! — Date: #REF!

Sediment Trap or Basin designs are based on Phase 1

Sediment Trap Condition: TEMP

Drainage Area (ac) =	1.62	
Disturbed Area (ac) =	1.62	
Runoff Coefficient (C) =	0.50	
Time of Concentration =	5.00	
2-yr Rainfall Intensity "i" (in/hr)* =	4.93	
25-yr Rainfall Intensity "i" (in/hr)* =	7.32	
Flow (Q_2) (cfs) =	4.0	(Q=c*i*drainage area)
Flow (Q_{25}) (cfs) =	5.9	(Q=c*i*drainage area)
Required Storage (cf) =	5,861	(134 cy per acre of acre of drainage)
Required "Wet" Storage (cf) =	2,931	(67 cy per acre of acre of drainage)
Required "Dry" Storage (cf) =	2,931	(67 cy per acre of acre of drainage)

Storage Dimensions:

Trap Side Slopes (X : 1) = 3.0 (2:1 max side slopes)

	Elev (ft)	Area (SF)	Cumulative Volume (CF)
Bottom of Trap	751.00	*1,949*	*0*
	751.50	*2,250*	*1,050*
	752.00	*2,566*	*2,254*
Base of Outlet	752.50	*2,896*	*3,619*
	753.00	*3,239*	*5,153*
	753.50	*3,596*	*6,862*
Top of Outlet	754.00	*3,968*	*8,753*
	754.50	*4,353*	*10,833*
Top of Trap	755.00	*4,752*	*13,109*

Designed Storage Elevation (ft)=	754.00	
Designed Total Storage Volume (cf)=	8,753	**O.K. > Minimum Required Storage**
Designed 'Wet' Storage Volume (cf)=	3,619	**O.K. > Minimum Required Storage**
Designed 'Dry' Storage Volume (cf)=	5,134	**O.K. > Minimum Required Storage**

Trap Dimensions:

Width (ft) =	25		
Length (ft) =	80		
Embankment Width (ft) =	8.0		
Side Slopes =	3:1		
Outlet Length =	10	ft (6* Drainage Area, ac)	(VA SMH 1.1 - Table C-SCM-11-1)
Graded Opening	15	ft	

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VIRGINIA TEMPORARY SEDIMENT TRAP DESIGN CALCULATIONS

Project Information

Project Name: PROJECT HERCULES — Drainage Area: ST-3
KHA Project #: 113706001
Designed by: STM — Date: 10/23/2025
Revised by: #REF! — Date: #REF!
Revised by: #REF! — Date: #REF!

Sediment Trap or Basin designs are based on Phase 1

Sediment Trap Condition: TEMP

Drainage Area (ac) =	2.96	
Disturbed Area (ac) =	2.96	
Runoff Coefficient (C) =	0.50	
Time of Concentration =	5.00	
2-yr Rainfall Intensity "i" (in/hr)* =	4.93	
25-yr Rainfall Intensity "i" (in/hr)* =	7.32	
Flow (Q_2) (cfs) =	7.3	(Q=c*i*drainage area)
Flow (Q_{25}) (cfs) =	10.8	(Q=c*i*drainage area)
Required Storage (cf) =	10,709	(134 cy per acre of acre of drainage)
Required "Wet" Storage (cf) =	5,355	(67 cy per acre of acre of drainage)
Required "Dry" Storage (cf) =	5,355	(67 cy per acre of acre of drainage)

Storage Dimensions:

Trap Side Slopes (X : 1) = 3.0 (2:1 max side slopes)

	Elev (ft)	Area (SF)	Cumulative Volume (CF)
Bottom of Trap	766.50	*5,596*	*0*
	767.00	*6,031*	*2,907*
	767.50	*6,481*	*6,035*
Base of Outlet	768.00	*6,944*	*9,391*
	768.50	*7,421*	*12,982*
	769.00	*7,913*	*16,816*
Top of Outlet	769.50	*8,418*	*20,899*
	770.00	*8,938*	*25,238*
Top of Trap	770.50	*9,471*	*29,840*

Designed Storage Elevation (ft)=	769.50	
Designed Total Storage Volume (cf)=	20,899	**O.K. > Minimum Required Storage**
Designed 'Wet' Storage Volume (cf)=	9,391	**O.K. > Minimum Required Storage**
Designed 'Dry' Storage Volume (cf)=	11,508	**O.K. > Minimum Required Storage**

Trap Dimensions:

Width (ft) =	61		
Length (ft) =	95		
Embankment Width (ft) =	8.0		
Side Slopes =	3:1		
Outlet Length =	18	ft (6* Drainage Area, ac)	(VA SMH 1.1 - Table C-SCM-11-1)
Graded Opening	23	ft	

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VIRGINIA TEMPORARY SEDIMENT TRAP DESIGN CALCULATIONS

Project Information

Project Name: PROJECT HERCULES — Drainage Area: ST-4
KHA Project #: 113706001
Designed by: STM — Date: 10/23/2025
Revised by: #REF! — Date: #REF!
Revised by: #REF! — Date: #REF!

Sediment Trap or Basin designs are based on Phase 1

Sediment Trap Condition: TEMP

Drainage Area (ac) =	2.27	
Disturbed Area (ac) =	2.27	
Runoff Coefficient (C) =	0.50	
Time of Concentration =	5.00	
2-yr Rainfall Intensity "i" (in/hr)* =	4.93	
25-yr Rainfall Intensity "i" (in/hr)* =	7.32	
Flow (Q_2) (cfs) =	5.6	(Q=c*i*drainage area)
Flow (Q_{25}) (cfs) =	8.3	(Q=c*i*drainage area)
Required Storage (cf) =	8,213	(134 cy per acre of acre of drainage)
Required "Wet" Storage (cf) =	4,106	(67 cy per acre of acre of drainage)
Required "Dry" Storage (cf) =	4,106	(67 cy per acre of acre of drainage)

Storage Dimensions:

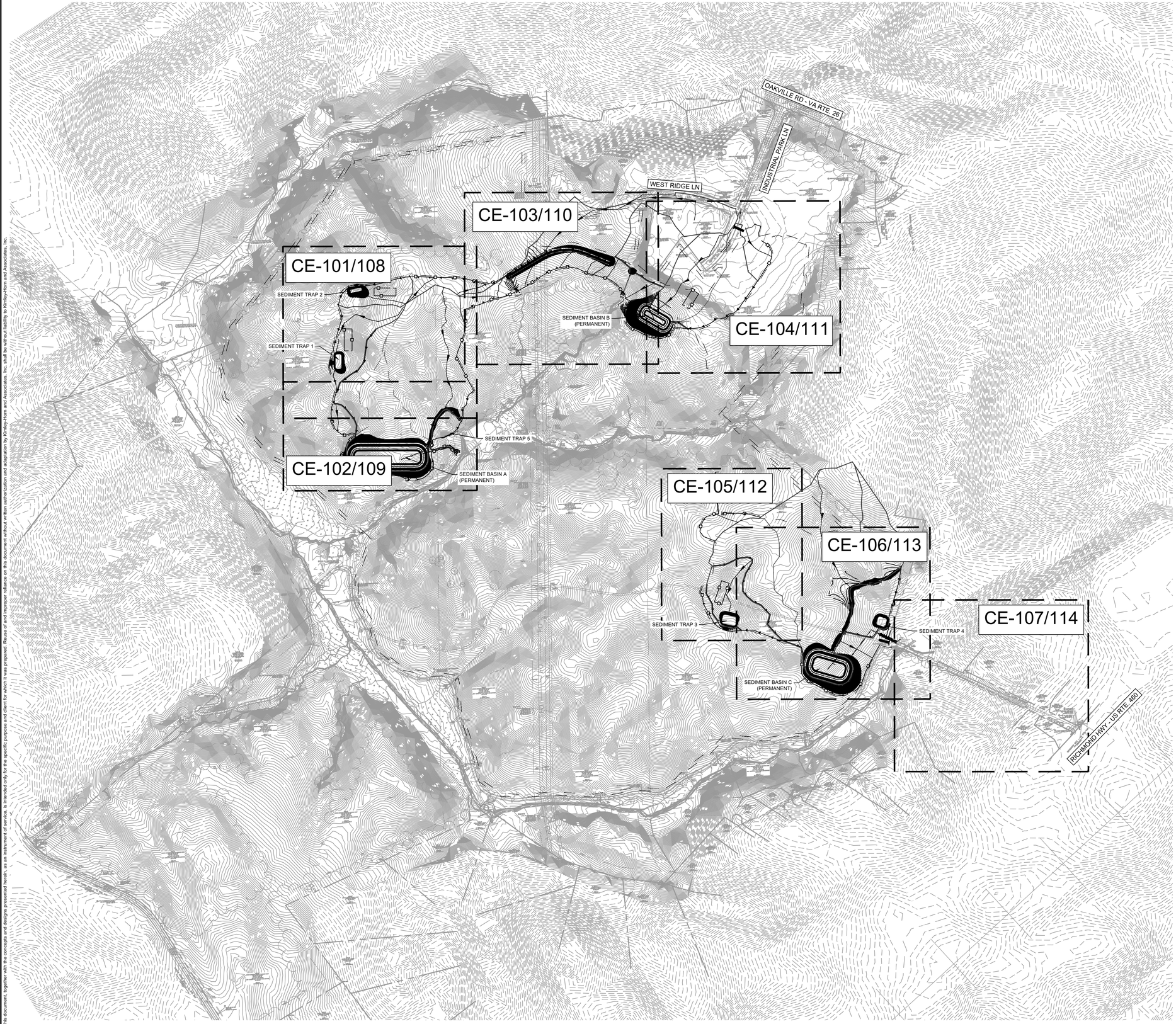
Trap Side Slopes (X : 1) = 3.0 (2:1 max side slopes)

	Elev (ft)	Area (SF)	Cumulative Volume (CF)
Bottom of Trap	756.00	*3,791*	*0*
	756.50	*4,043*	*1,959*
	757.00	*4,400*	*4,069*
Base of Outlet	757.50	*4,770*	*6,362*
	758.00	*5,154*	*8,843*
	758.50	*5,553*	*11,520*
Top of Outlet	759.00	*5,965*	*14,399*
	759.50	*6,392*	*17,488*
Top of Trap	760.00	*6,832*	*20,794*

Designed Storage Elevation (ft)=	759.00	
Designed Total Storage Volume (cf)=	14,399	**O.K. > Minimum Required Storage**
Designed 'Wet' Storage Volume (cf)=	6,362	**O.K. > Minimum Required Storage**
Designed 'Dry' Storage Volume (cf)=	8,037	**O.K. > Minimum Required Storage**

Trap Dimensions:

Width (ft) =	60		
Length (ft) =	65		
Embankment Width (ft) =	8.0		
Side Slopes =	3:1		
Outlet Length =	14	ft (6* Drainage Area, ac)	(VA SMH 1.1 - Table C-SCM-11-1)
Graded Opening	19	ft	



VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

	CE	CONSTRUCTION ENTRANCE
— x — x —	SF	SILT FENCE
	SSF	SUPER SILT FENCE
	IP	INLET PROTECTION
	CIP	CULVERT INLET PROTECTION
	DD	DIVERSION DIKE
	FD	FILL DIVERSION
— ST —	ST	SEDIMENT TRAP
— SB —	SB	SEDIMENT BASIN
	OP	OUTLET PROTECTION
	CD	ROCK CHECK DAM
— TS —	TS	TEMPORARY SEEDING
— PS —	PS	PERMANENT SEEDING
	BM	BLANKET MATTING
		LIMITS OF DISTURBANCE
DIV-XX		DIVERSION
	SFO	SILT FENCE OUTLET
		DRAINAGE AREA BOUNDARY
		DIVERSION BOUNDARY
		"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEETS CV-101 - CV-106 FOR DEMOLITION PLAN.
2. SEE SHEETS CE-100 THROUGH CE-504 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. SEE SHEETS CP-501AND CP-502 FOR PLANTING BED AND SODDING DETAILS.
4. TEMPORARY SEEDING SHOULD BE PLACED IN ALL DISTURBED AREAS.
5. SEE TABLES ON SHEET CE-503 FOR SEDIMENT BASIN AND SEDIMENT TRAP DETAILS.
6. SEE SHEET CE-501 FOR PHASE I PROBABLE CONSTRUCTION SEQUENCE.
7. SEE SHEET CE-503 FOR DIVERSION CALCULATIONS. CONTRACTOR TO INSTALL CHANNEL LININGS AS NOTED IN THE "PHASE I E&S DITCH DESIGN SUMMARY TABLE" ON SHEET CE-503.
8. FLOW PATHS HAVE BEEN PROVIDED FOR AREAS DRAINING TO SUPER SILT FENCE TO DEMONSTRATE COMPLIANCE WITH TABLE C-PCM-04-2 OF THE 2024 VIRGINIA STORMWATER MANAGEMENT HANDBOOK.
9. PORTIONS OF LOD WITHOUT A PERIMETER CONTROL SHALL BE STAKED AND MARKED WITH FLAGS SO CONTRACTOR DOES NOT PERFORM WORK OUTSIDE OF LOD.
10. SILT FENCE TO BE UTILIZED ON THE LOW SIDE OF ALL 20' WIDE SECURITY FENCE INSTALLATION LOD CORRIDOR, WITH PORTIONS OF SILT FENCE INSTALLED PRIOR TO FENCE INSTALLATION, THEN REMOVED ONCE STABILIZED AND PERMANENT SEEDING APPLIED. WATER TO SHEET FLOW ACROSS THE 20' INSTALLATION CORRIDOR TO THE MAXIMUM EXTENT PRACTICAL. CONTRACTOR TO WORK IN LIMITED SEGMENTS AT THE DISCRETION OF THE LOCAL E&S INSPECTOR, WITH SUBSEQUENT SEGMENTS NOT INSTALLED UNTIL SECURITY FENCE IS INSTALLED, PORTION OF LOD IS RESTABILIZED/SEEDED, AND CORRESPONDING SILT FENCE REMOVED. SEE SHEET CE-503 FOR TYPICAL DETAIL.

NORTH

GRAPHIC SCALE IN FEET
0 150 300 600

Jacobs

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WWW.KIMLEY-HORN.COM

COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402057995
11/14/2025
PROFESSIONAL ENGINEER

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

OVERALL PHASE I EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-100

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-100 PHASE I EROSION AND SEDIMENT CONTROL November 05, 2025 04:15:52pm
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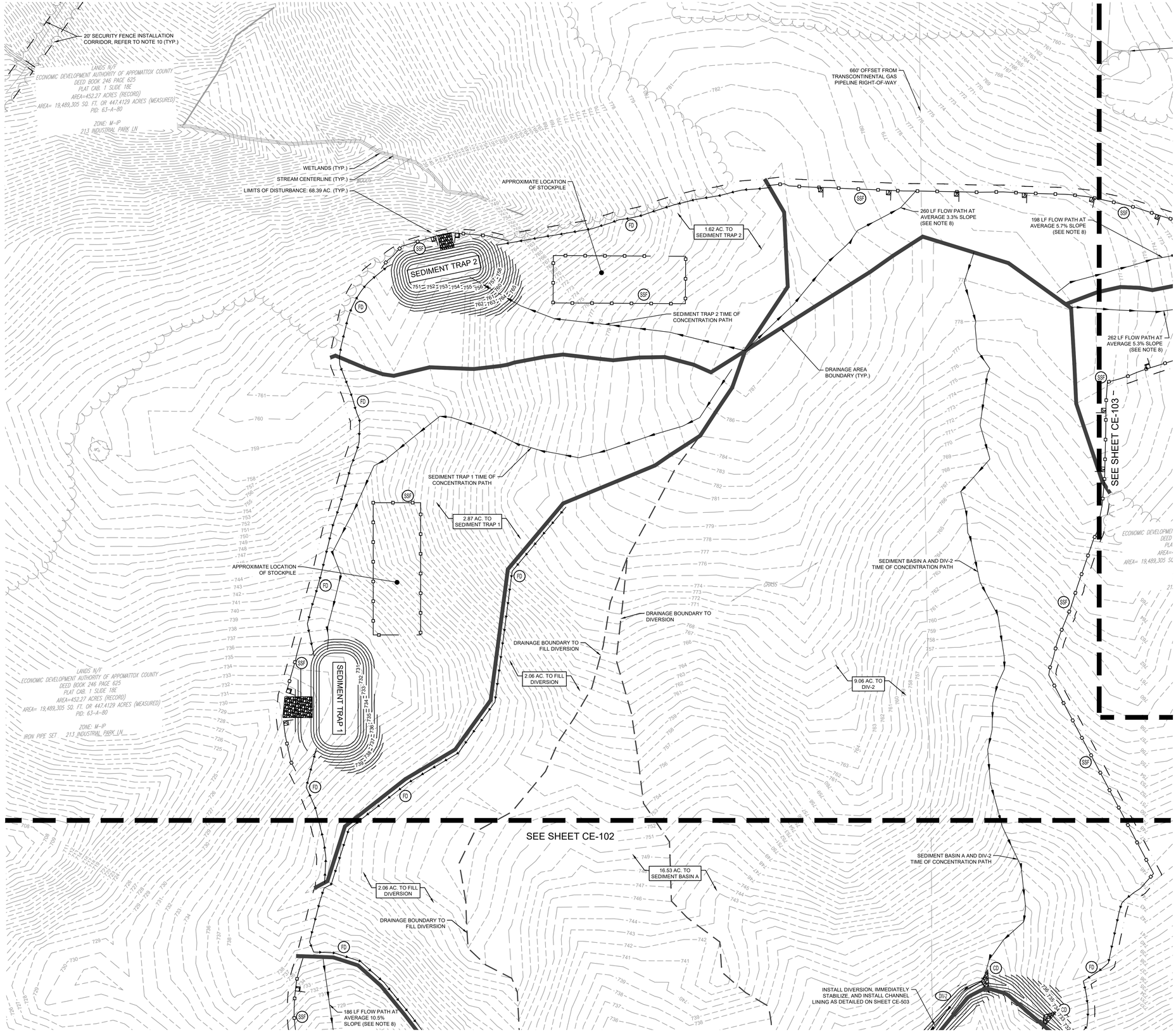

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

	CE	CONSTRUCTION ENTRANCE
x — x — x	SF	SILT FENCE
	SSF	SUPER SILT FENCE
	IP	INLET PROTECTION
	CIP	CULVERT INLET PROTECTION
	DD	DIVERSION DIKE
	FD	FILL DIVERSION
ST	ST	SEDIMENT TRAP
SB	SB	SEDIMENT BASIN
	OP	OUTLET PROTECTION
	CD	ROCK CHECK DAM
TS	TS	TEMPORARY SEEDING
PS	PS	PERMANENT SEEDING
	BM	BLANKET MATTING
		LIMITS OF DISTURBANCE
DIV-XX		DIVERSION
	SFO	SILT FENCE OUTLET
		DRAINAGE AREA BOUNDARY
		DIVERSION BOUNDARY
		"J-HOOK" SILT FENCE

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10. SILT FENCE TO BE UTILIZED ON THE LOW SIDE OF ALL 20' WIDE SECURITY FENCE INSTALLATION LOD CORRIDOR. WITH PORTIONS OF SILT FENCE INSTALLED PRIOR TO FENCE INSTALLATION, THEN REMOVED ONCE STABILIZED AND PERMANENT SEEDING APPLIED. WATER TO SHEET FLOW ACROSS THE 20' INSTALLATION CORRIDOR TO THE MAXIMUM EXTENT PRACTICAL. CONTRACTOR TO WORK IN LIMITED SEGMENTS AT THE DISCRETION OF THE LOCAL E&S INSPECTOR, WITH SUBSEQUENT SEGMENTS NOT INSTALLED UNTIL SECURITY FENCE IS INSTALLED, PORTION OF LOD IS RESTABILIZED/SEEDED, AND CORRESPONDING SILT FENCE REMOVED. SEE SHEET CE-503 FOR TYPICAL DETAIL.

Jacobs

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COMMONWEALTH OF VIRGINIA
JOSHUA M MACDONALD
Lic. No. 0402057995
PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE I EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-101

Plotted By:McCray, Stephen Sheet Set:Khia Layout:CE-101 PHASE I EROSION AND SEDIMENT CONTROL November 09, 2025 04:16:15pm
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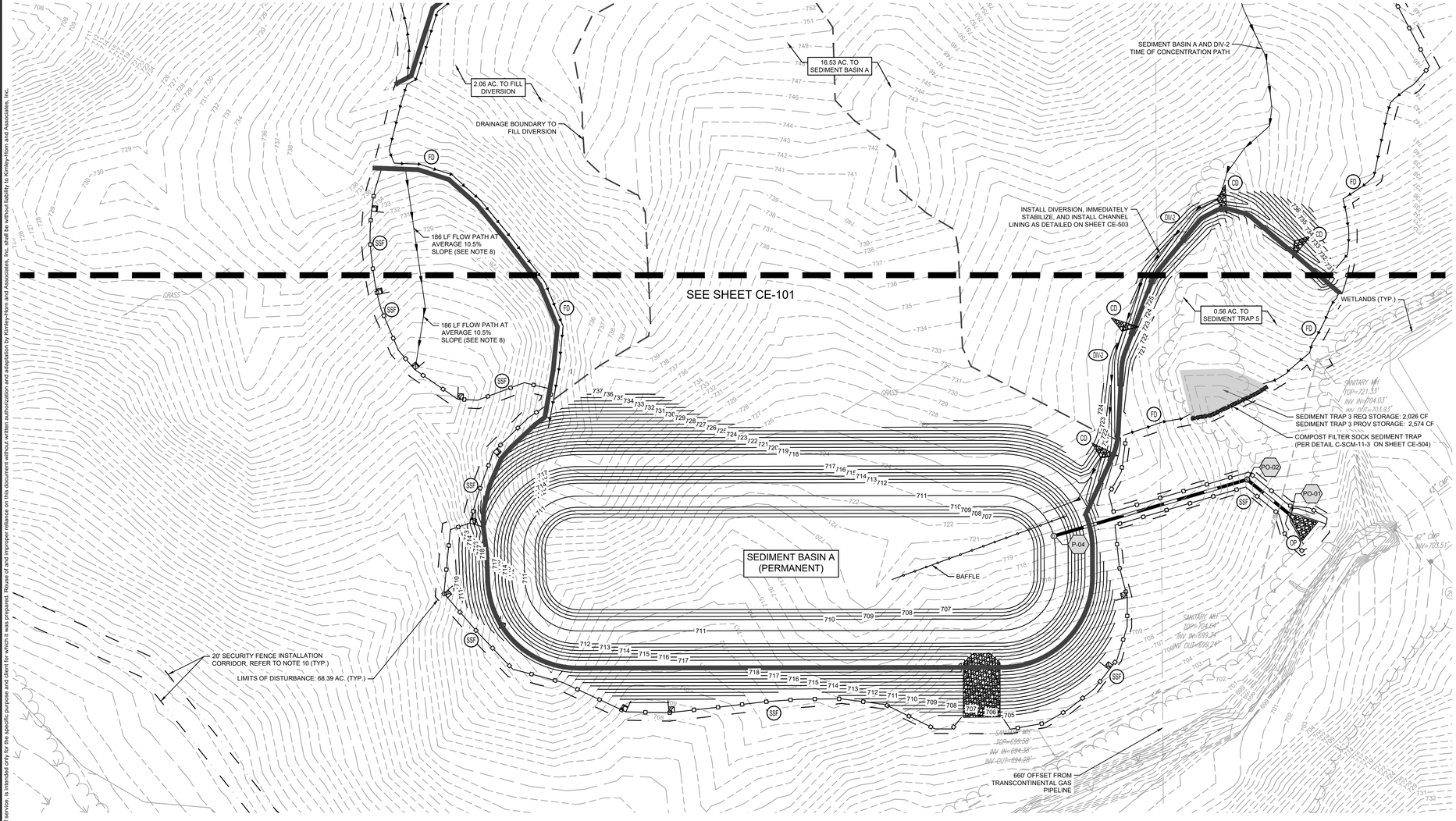

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

	CE	CONSTRUCTION ENTRANCE
x x x	SF	SILT FENCE
	SSF	SUPER SILT FENCE
	IP	INLET PROTECTION
	CIP	CULVERT INLET PROTECTION
	DD	DIVERSION DIKE
	FD	FILL DIVERSION
ST	ST	SEDIMENT TRAP
SB	SB	SEDIMENT BASIN
	OP	OUTLET PROTECTION
	CD	ROCK CHECK DAM
TS	TS	TEMPORARY SEEDING
PS	PS	PERMANENT SEEDING
	BM	BLANKET MATTING
		LIMITS OF DISTURBANCE
DIV-XX		DIVERSION
	SFO	SILT FENCE OUTLET
		DRAINAGE AREA BOUNDARY
		DIVERSION BOUNDARY
		"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEETS CV-101 - CV-106 FOR DEMOLITION PLAN.
2. SEE SHEETS CE-100 THROUGH CE-504 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. SEE SHEETS CP-501AND CP-502 FOR PLANTING BED AND SODDING DETAILS.
4. TEMPORARY SEEDING SHOULD BE PLACED IN ALL DISTURBED AREAS.
5. SEE TABLES ON SHEET CE-503 FOR SEDIMENT BASIN AND SEDIMENT TRAP DETAILS.
6. SEE SHEET CE-501 FOR PHASE I PROBABLE CONSTRUCTION SEQUENCE.
7. SEE SHEET CE-503 FOR DIVERSION CALCULATIONS. CONTRACTOR TO INSTALL CHANNEL LININGS AS NOTED IN THE "PHASE I E&S DITCH DESIGN SUMMARY TABLE" ON SHEET CE-503.
8. FLOW PATHS HAVE BEEN PROVIDED FOR AREAS DRAINING TO SUPER SILT FENCE TO DEMONSTRATE COMPLIANCE WITH TABLE C-PCM-04-2 OF THE 2024 VIRGINIA STORMWATER MANAGEMENT HANDBOOK.
9. PORTIONS OF LOD WITHOUT A PERIMETER CONTROL SHALL BE STAKED AND MARKED WITH FLAGS SO CONTRACTOR DOES NOT PERFORM WORK OUTSIDE OF LOD.
10. SILT FENCE TO BE UTILIZED ON THE LOW SIDE OF ALL 20' WIDE SECURITY FENCE INSTALLATION LOD CORRIDOR, WITH PORTIONS OF SILT FENCE INSTALLED PRIOR TO FENCE INSTALLATION, THEN REMOVED ONCE STABILIZED AND PERMANENT SEEDING APPLIED. WATER TO SHEET FLOW ACROSS THE 20' INSTALLATION CORRIDOR TO THE MAXIMUM EXTENT PRACTICAL. CONTRACTOR TO WORK IN LIMITED SEGMENTS AT THE DISCRETION OF THE LOCAL E&S INSPECTOR, WITH SUBSEQUENT SEGMENTS NOT INSTALLED UNTIL SECURITY FENCE IS INSTALLED, PORTION OF LOD IS RESTABILIZED/SEEDED, AND CORRESPONDING SILT FENCE REMOVED. SEE SHEET CE-503 FOR TYPICAL DETAIL.

Jacobs

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JOSH M MACDONALD
Lic. No. 0402057995
PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE I EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-102

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-102 PHASE I EROSION AND SEDIMENT CONTROL November 05, 2025 04:16:39pm
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Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-103 PHASE I EROSION AND SEDIMENT CONTROL November 05, 2025 04:17:06pm
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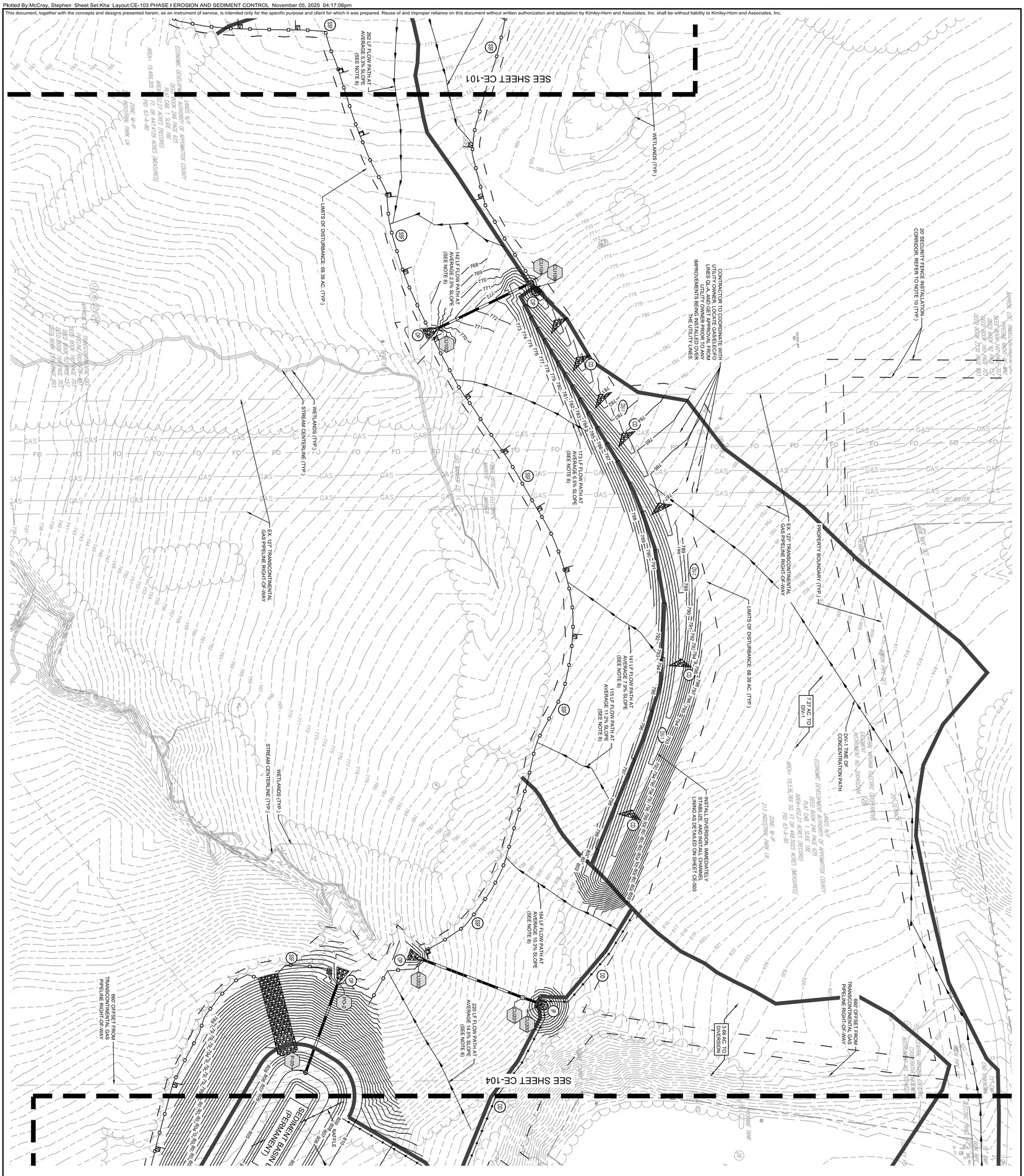
SEE SHEET CE-101
SEE SHEET CE-104
LIMITS OF DISTURBANCE: 68.39 AC. (TYP.)
LIMITS OF DISTURBANCE: 66.39 AC. (TYP.)
PROPERTY BOUNDARY (TYP.)
WETLANDS (TYP.)
STREAM CENTERLINE (TYP.)
EX. 127' TRANSCONTINENTAL GAS PIPELINE RIGHT-OF-WAY
20' SECURITY FENCE INSTALLATION CORRIDOR, REFER TO NOTE 10 (TYP.)
CONTRACTOR TO COORDINATE WITH UTILITY OWNER, LOCATE GASELECO LINES OLA AND GET APPROVAL FROM UTILITY OWNER PRIOR TO ANY IMPROVEMENTS BEING INSTALLED OVER THE UTILITY LINES.
INSTALL DIVERSION, IMMEDIATELY STABILIZE, AND INSTALL CHANNEL LINING AS DETAILED ON SHEET CE-503
DIV-1 TIME OF CONCENTRATION PATH
727 AC. TO DIV-1
5.98 AC. TO DIVERSION
8907' OFFSET FROM TRANSCONTINENTAL GAS PIPELINE RIGHT-OF-WAY
8907' OFFSET FROM TRANSCONTINENTAL GAS PIPELINE RIGHT-OF-WAY
SEDIMENT BASIN (PERMANENT)
265 LF FLOW PATH AT AVERAGE 5.3% SLOPE (SEE NOTE 8)
142 LF FLOW PATH AT AVERAGE 2.6% SLOPE (SEE NOTE 8)
125 LF FLOW PATH AT AVERAGE 6.5% SLOPE (SEE NOTE 8)
141 LF FLOW PATH AT AVERAGE 10.5% SLOPE (SEE NOTE 8)
115 LF FLOW PATH AT AVERAGE 11.5% SLOPE (SEE NOTE 8)
164 LF FLOW PATH AT AVERAGE 10.3% SLOPE (SEE NOTE 8)
2625 LF FLOW PATH AT AVERAGE 14.5% SLOPE (SEE NOTE 8)
DIV-1
DIV-2
DIV-3
DIV-4
DIV-5
DIV-6
DIV-7
DIV-8
DIV-9
DIV-10
DIV-11
DIV-12
DIV-13
DIV-14
DIV-15
DIV-16
DIV-17
DIV-18
DIV-19
DIV-20
DIV-21
DIV-22
DIV-23
DIV-24
DIV-25
DIV-26
DIV-27
DIV-28
DIV-29
DIV-30
DIV-31
DIV-32
DIV-33
DIV-34
DIV-35
DIV-36
DIV-37
DIV-38
DIV-39
DIV-40

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

	CE	CONSTRUCTION ENTRANCE
— x — x — x —	SF	SILT FENCE
	SSF	SUPER SILT FENCE
	IP	INLET PROTECTION
	CIP	CULVERT INLET PROTECTION
	DD	DIVERSION DIKE
	FD	FILL DIVERSION
— ST —	ST	SEDIMENT TRAP
— SB —	SB	SEDIMENT BASIN
	OP	OUTLET PROTECTION
	CD	ROCK CHECK DAM
— TS —	TS	TEMPORARY SEEDING
— PS —	PS	PERMANENT SEEDING
	BM	BLANKET MATTING
		LIMITS OF DISTURBANCE
DIV-XX		DIVERSION
	SFO	SILT FENCE OUTLET
		DRAINAGE AREA BOUNDARY
		DIVERSION BOUNDARY
		"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEETS CV-101 - CV-106 FOR DEMOLITION PLAN.
2. SEE SHEETS CE-100 THROUGH CE-504 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. SEE SHEETS CP-501AND CP-502 FOR PLANTING BED AND SODDING DETAILS.
4. TEMPORARY SEEDING SHOULD BE PLACED IN ALL DISTURBED AREAS.
5. SEE TABLES ON SHEET CE-503 FOR SEDIMENT BASIN AND SEDIMENT TRAP DETAILS.
6. SEE SHEET CE-501 FOR PHASE I PROBABLE CONSTRUCTION SEQUENCE.
7. SEE SHEET CE-503 FOR DIVERSION CALCULATIONS. CONTRACTOR TO INSTALL CHANNEL LININGS AS NOTED IN THE "PHASE I E&S DITCH DESIGN SUMMARY TABLE" ON SHEET CE-503.
8. FLOW PATHS HAVE BEEN PROVIDED FOR AREAS DRAINING TO SUPER SILT FENCE TO DEMONSTRATE COMPLIANCE WITH TABLE C-PCM-04-2 OF THE 2024 VIRGINIA STORMWATER MANAGEMENT HANDBOOK.
9. PORTIONS OF LOD WITHOUT A PERIMETER CONTROL SHALL BE STAKED AND MARKED WITH FLAGS SO CONTRACTOR DOES NOT PERFORM WORK OUTSIDE OF LOD.
10. SILT FENCE TO BE UTILIZED ON THE LOW SIDE OF ALL 20' WIDE SECURITY FENCE INSTALLATION LOD CORRIDOR, WITH PORTIONS OF SILT FENCE INSTALLED PRIOR TO FENCE INSTALLATION, THEN REMOVED ONCE STABILIZED AND PERMANENT SEEDING APPLIED. WATER TO SHEET FLOW ACROSS THE 20' INSTALLATION CORRIDOR TO THE MAXIMUM EXTENT PRACTICAL. CONTRACTOR TO WORK IN LIMITED SEGMENTS AT THE DISCRETION OF THE LOCAL E&S INSPECTOR, WITH SUBSEQUENT SEGMENTS NOT INSTALLED UNTIL SECURITY FENCE IS INSTALLED, PORTION OF LOD IS RESTABILIZED/SEEDED, AND CORRESPONDING SILT FENCE REMOVED. SEE SHEET CE-503 FOR TYPICAL DETAIL.

Jacobs

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11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE I EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-104

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-104 PHASE I EROSION AND SEDIMENT CONTROL November 05, 2025 04:17:30pm
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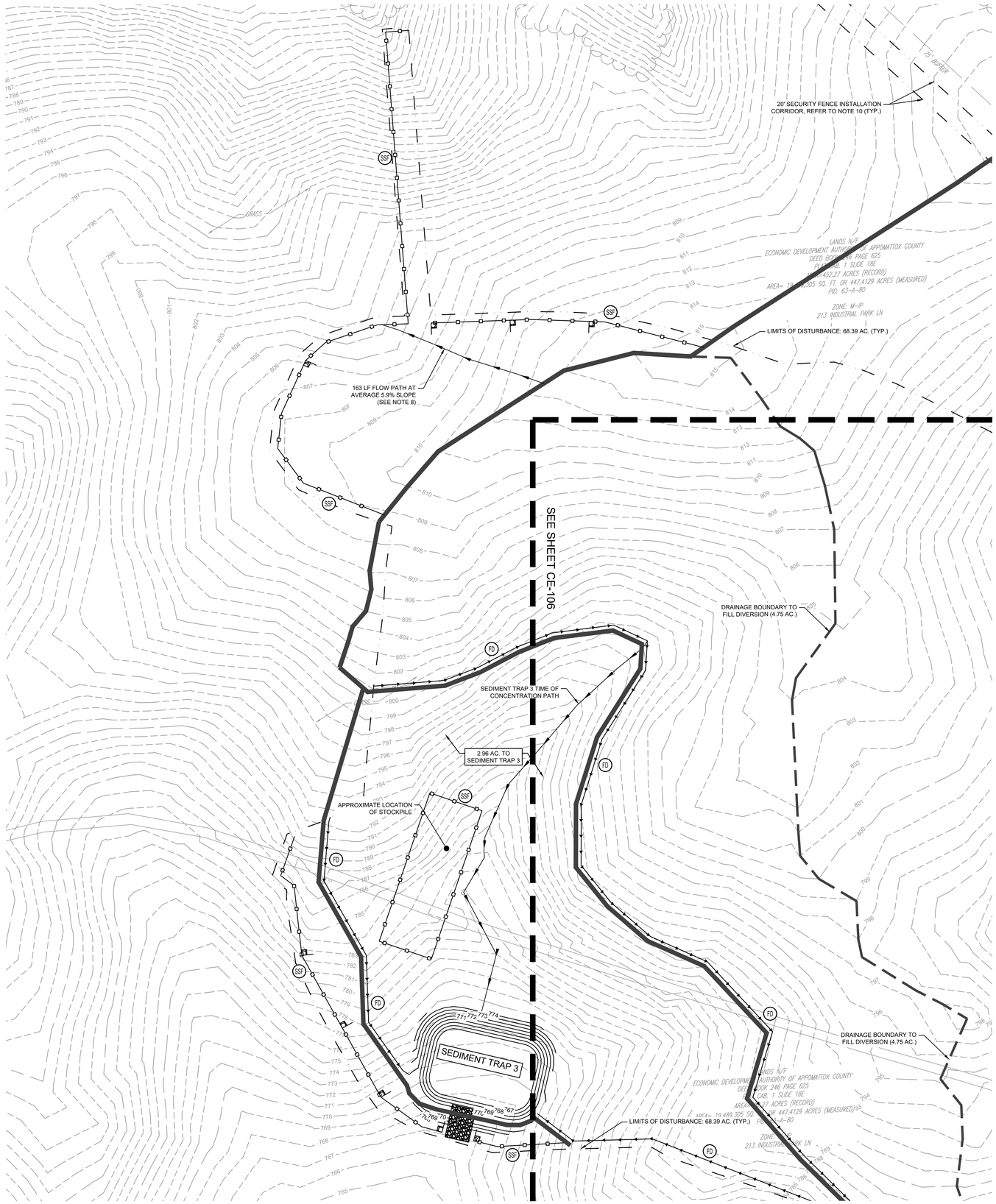

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

CE	CONSTRUCTION ENTRANCE
SF	SILT FENCE
SSF	SUPER SILT FENCE
IP	INLET PROTECTION
CIP	CULVERT INLET PROTECTION
DD	DIVERSION DIKE
FD	FILL DIVERSION
ST	SEDIMENT TRAP
SB	SEDIMENT BASIN
OP	OUTLET PROTECTION
CD	ROCK CHECK DAM
TS	TEMPORARY SEEDING
PS	PERMANENT SEEDING
BM	BLANKET MATTING
	LIMITS OF DISTURBANCE
DIV-XX	DIVERSION
SFO	SILT FENCE OUTLET
	DRAINAGE AREA BOUNDARY
	DIVERSION BOUNDARY
	"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

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2. SEE SHEETS CE-100 THROUGH CE-504 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
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GRAPHIC SCALE IN FEET
0 25 50 100

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11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE I EROSION AND SEDIMENT CONTROL

PROJECT HERCULES
APPOMATTOX COUNTY VA

SHEET NUMBER
CE-105

Plotted By:McCray, Stephen Sheet Set:Khia Layout:CE-105 PHASE I EROSION AND SEDIMENT CONTROL November 09, 2025 04:17:55pm
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VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

	CE	CONSTRUCTION ENTRANCE
x — x — x	SF	SILT FENCE
	SSF	SUPER SILT FENCE
	IP	INLET PROTECTION
	CIP	CULVERT INLET PROTECTION
	DD	DIVERSION DIKE
	FD	FILL DIVERSION
	ST	SEDIMENT TRAP
	SB	SEDIMENT BASIN
	OP	OUTLET PROTECTION
	CD	ROCK CHECK DAM
	TS	TEMPORARY SEEDING
	PS	PERMANENT SEEDING
	BM	BLANKET MATTING
		LIMITS OF DISTURBANCE
DIV-XX		DIVERSION
	SFO	SILT FENCE OUTLET
		DRAINAGE AREA BOUNDARY
		DIVERSION BOUNDARY
		"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

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2. SEE SHEETS CE-100 THROUGH CE-504 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. SEE SHEETS CP-501AND CP-502 FOR PLANTING BED AND SODDING DETAILS.
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6. SEE SHEET CE-501 FOR PHASE I PROBABLE CONSTRUCTION SEQUENCE.
7. SEE SHEET CE-503 FOR DIVERSION CALCULATIONS. CONTRACTOR TO INSTALL CHANNEL LININGS AS NOTED IN THE "PHASE I E&S DITCH DESIGN SUMMARY TABLE" ON SHEET CE-503.
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11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE I EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-106

Plotted By:McCray, Stephen Sheet Set:Khа Layout:CE-106 PHASE I EROSION AND SEDIMENT CONTROL November 09, 2025 04:18:22pm
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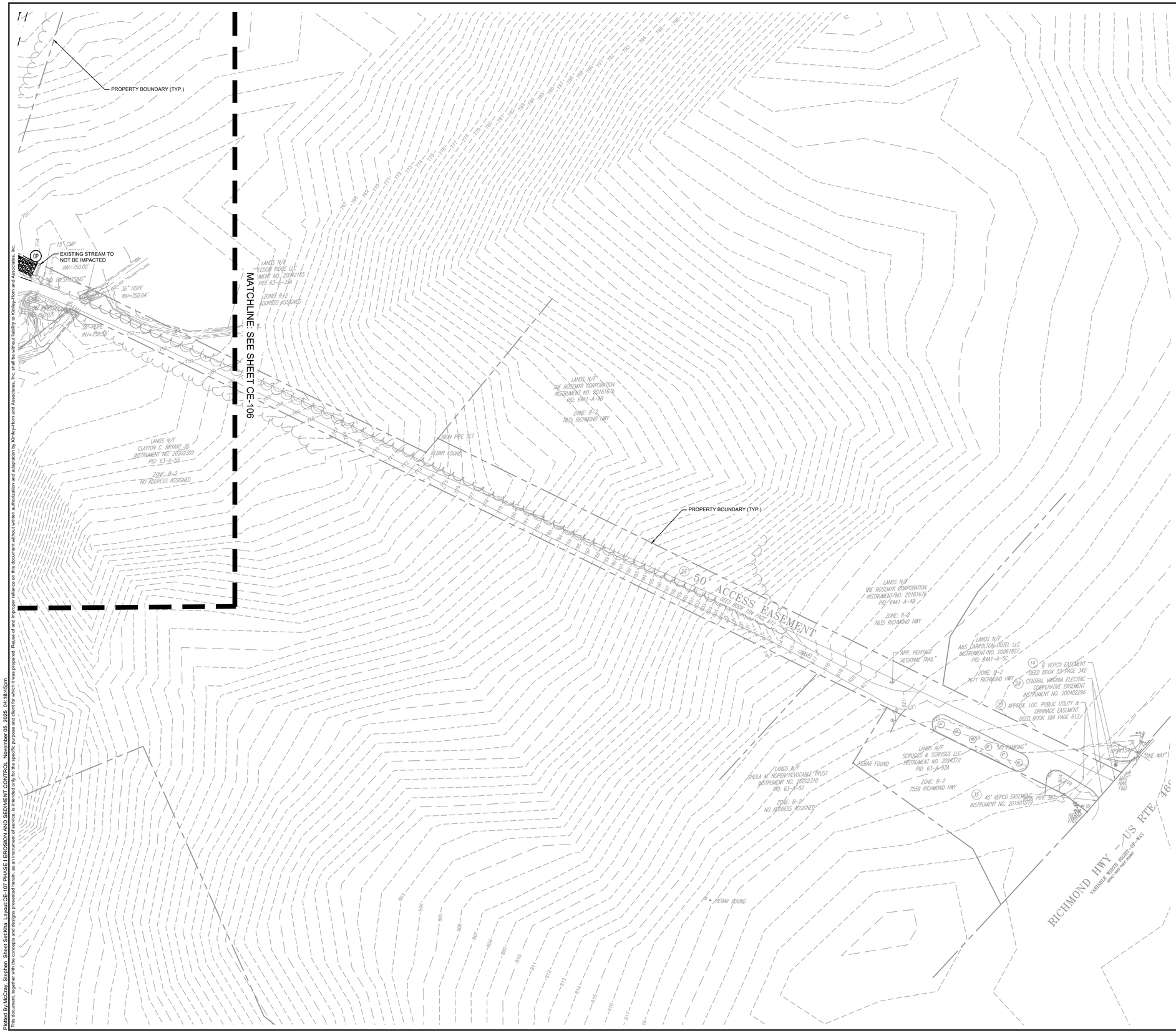

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

	CE	CONSTRUCTION ENTRANCE
— x — x —	SF	SILT FENCE
	SSF	SUPER SILT FENCE
	IP	INLET PROTECTION
	CIP	CULVERT INLET PROTECTION
	DD	DIVERSION DIKE
	FD	FILL DIVERSION
— ST —	ST	SEDIMENT TRAP
— SB —	SB	SEDIMENT BASIN
	OP	OUTLET PROTECTION
	CD	ROCK CHECK DAM
— TS —	TS	TEMPORARY SEEDING
— PS —	PS	PERMANENT SEEDING
	BM	BLANKET MATTING
		LIMITS OF DISTURBANCE
DIV-XX		DIVERSION
	SFO	SILT FENCE OUTLET
		DRAINAGE AREA BOUNDARY
		DIVERSION BOUNDARY
		"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEETS CV-101 - CV-106 FOR DEMOLITION PLAN.
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5. SEE TABLES ON SHEET CE-503 FOR SEDIMENT BASIN AND SEDIMENT TRAP DETAILS.
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NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

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11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE I EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-107

Plotted By: McCray, Stephen Sheet Set: Kha Layout: CE-107 PHASE I EROSION AND SEDIMENT CONTROL November 05, 2025 04:18:45pm
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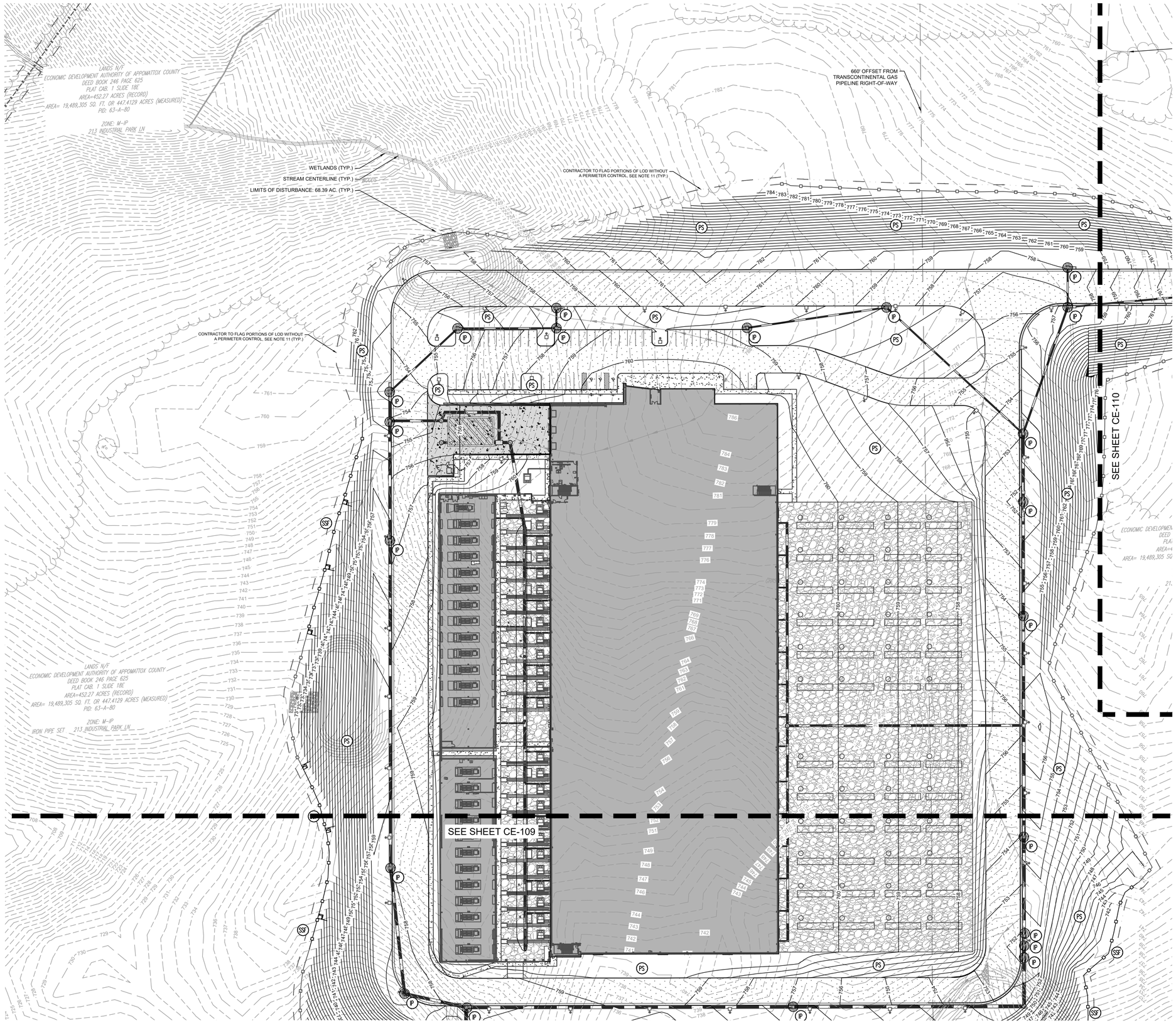

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

	CE	CONSTRUCTION ENTRANCE
x x x	SF	SILT FENCE
	SSF	SUPER SILT FENCE
	IP	INLET PROTECTION
	CIP	CULVERT INLET PROTECTION
	DD	DIVERSION DIKE
	FD	FILL DIVERSION
ST	ST	SEDIMENT TRAP
SB	SB	SEDIMENT BASIN
	OP	OUTLET PROTECTION
	CD	ROCK CHECK DAM
TS	TS	TEMPORARY SEEDING
PS	PS	PERMANENT SEEDING
	BM	BLANKET MATTING
		LIMITS OF DISTURBANCE
SC/W		STORMWATER CONVEYANCE CHANNEL
		DRAINAGE AREA BOUNDARY
		DIVERSION BOUNDARY
		"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEETS CV-101 - CV-106 FOR DEMOLITION PLAN.
2. SEE SHEETS CE-100 THROUGH CE-504 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. SEE SHEETS CP-501 AND CP-502 FOR PLANTING BED AND SODDING DETAILS.
4. TEMPORARY SEEDING SHOULD BE PLACED IN ALL DISTURBED AREAS.
5. NO MORE THAN FIFTY (50) PERCENT OF THE CONSTRUCTION FOOTPRINT SHALL BE DISTURBED AT ANY TIME, WITHOUT PERMANENT VEGETATION ESTABLISHED. COUNTY STAFF MAY LIMIT THE AMOUNT OF DISTURBED ACREAGE DUE TO SITE CHARACTERISTICS.
6. PRIOR TO SEDIMENT TRAP OR BASIN REMOVAL, GRADING MUST BE COMPLETED SUCH THAT DRAINAGE AREAS PREVIOUSLY DRAINING TO TRAPS OR BASINS WILL DRAIN POSITIVELY TO ANOTHER BMP.
7. AFTER CONSTRUCTION IS COMPLETE, TEMPORARY CONSTRUCTION AREAS ARE TO BE RESTORED TO THE EXISTING CONDITION PER THE RESTORATION SEQUENCE ON SHEET CG-501.
8. SEE TABLES ON SHEET CE-503 FOR SEDIMENT BASIN AND SEDIMENT TRAP DETAILS.
9. SEE SHEET CE-501 FOR PHASE II PROBABLE CONSTRUCTION SEQUENCE.
10. SEE SHEET CG-503 FOR STORMWATER CONVEYANCE CHANNEL CALCULATIONS. CONTRACTOR TO INSTALL CHANNEL LININGS AS NOTED IN THE "PHASE II E&S AND POST DEVELOPMENT DITCH DESIGN SUMMARY TABLE" ON SHEET CG-503.
11. PORTIONS OF LOD WITHOUT A PERIMETER CONTROL SHALL BE STAKED AND MARKED WITH FLAGS SO CONTRACTOR DOES NOT PERFORM WORK OUTSIDE OF LOD.
12. SILT FENCE TO BE UTILIZED ON THE LOW SIDE OF ALL 20' WIDE SECURITY FENCE INSTALLATION LOD CORRIDOR, WITH PORTIONS OF SILT FENCE INSTALLED PRIOR TO FENCE INSTALLATION, THEN REMOVED ONCE STABILIZED AND PERMANENT SEEDING APPLIED. WATER TO SHEET FLOW ACROSS THE 20' INSTALLATION CORRIDOR TO THE MAXIMUM EXTENT PRACTICAL. CONTRACTOR TO WORK IN LIMITED SEGMENTS AT THE DISCRETION OF THE LOCAL E&S INSPECTOR, WITH SUBSEQUENT SEGMENTS NOT INSTALLED UNTIL SECURITY FENCE IS INSTALLED, PORTION OF LOD IS RESTABILIZED/SEEDED, AND CORRESPONDING SILT FENCE REMOVED. SEE SHEET CE-503 FOR TYPICAL DETAIL.

GRAPHIC SCALE IN FEET
0 25 50 100

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11/14/2025

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PHASE II EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-108

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-108 PHASE II EROSION AND SEDIMENT CONTROL November 06, 2025 01:26:55pm
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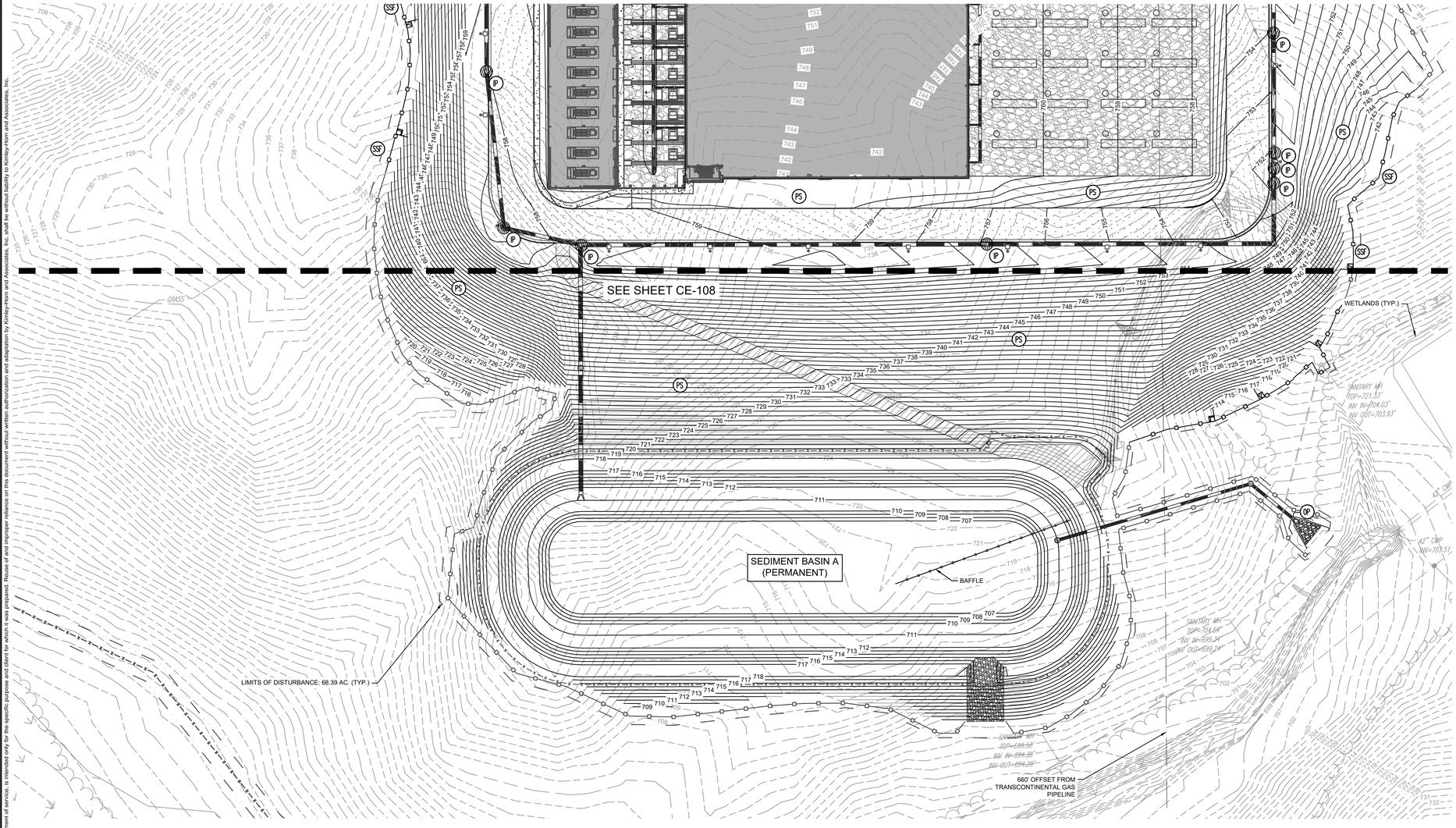

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

CE	CONSTRUCTION ENTRANCE
SF	SILT FENCE
SSF	SUPER SILT FENCE
IP	INLET PROTECTION
CIP	CULVERT INLET PROTECTION
DD	DIVERSION DIKE
FD	FILL DIVERSION
ST	SEDIMENT TRAP
SB	SEDIMENT BASIN
OP	OUTLET PROTECTION
CD	ROCK CHECK DAM
TS	TEMPORARY SEEDING
PS	PERMANENT SEEDING
BM	BLANKET MATTING
	LIMITS OF DISTURBANCE
SC/W	STORMWATER CONVEYANCE CHANNEL
	DRAINAGE AREA BOUNDARY
	DIVERSION BOUNDARY
	"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

1. SEE SHEETS CV-101 - CV-106 FOR DEMOLITION PLAN.
2. SEE SHEETS CE-100 THROUGH CE-504 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. SEE SHEETS CP-501 AND CP-502 FOR PLANTING BED AND SODDING DETAILS.
4. TEMPORARY SEEDING SHOULD BE PLACED IN ALL DISTURBED AREAS.
5. NO MORE THAN FIFTY (50) PERCENT OF THE CONSTRUCTION FOOTPRINT SHALL BE DISTURBED AT ANY TIME, WITHOUT PERMANENT VEGETATION ESTABLISHED. COUNTY STAFF MAY LIMIT THE AMOUNT OF DISTURBED ACREAGE DUE TO SITE CHARACTERISTICS.
6. PRIOR TO SEDIMENT TRAP OR BASIN REMOVAL, GRADING MUST BE COMPLETED SUCH THAT DRAINAGE AREAS PREVIOUSLY DRAINING TO TRAPS OR BASINS WILL DRAIN POSITIVELY TO ANOTHER BMP.
7. AFTER CONSTRUCTION IS COMPLETE, TEMPORARY CONSTRUCTION AREAS ARE TO BE RESTORED TO THE EXISTING CONDITION PER THE RESTORATION SEQUENCE ON SHEET CG-501.
8. SEE TABLES ON SHEET CE-503 FOR SEDIMENT BASIN AND SEDIMENT TRAP DETAILS.
9. SEE SHEET CE-501 FOR PHASE II PROBABLE CONSTRUCTION SEQUENCE.
10. SEE SHEET CG-503 FOR STORMWATER CONVEYANCE CHANNEL CALCULATIONS. CONTRACTOR TO INSTALL CHANNEL LININGS AS NOTED IN THE "PHASE II E&S AND POST DEVELOPMENT DITCH DESIGN SUMMARY TABLE" ON SHEET CG-503.
11. PORTIONS OF LOD WITHOUT A PERIMETER CONTROL SHALL BE STAKED AND MARKED WITH FLAGS SO CONTRACTOR DOES NOT PERFORM WORK OUTSIDE OF LOD.
12. SILT FENCE TO BE UTILIZED ON THE LOW SIDE OF ALL 20' WIDE SECURITY FENCE INSTALLATION LOD CORRIDOR, WITH PORTIONS OF SILT FENCE INSTALLED PRIOR TO FENCE INSTALLATION, THEN REMOVED ONCE STABILIZED AND PERMANENT SEEDING APPLIED. WATER TO SHEET FLOW ACROSS THE 20' INSTALLATION CORRIDOR TO THE MAXIMUM EXTENT PRACTICAL. CONTRACTOR TO WORK IN LIMITED SEGMENTS AT THE DISCRETION OF THE LOCAL E&S INSPECTOR, WITH SUBSEQUENT SEGMENTS NOT INSTALLED UNTIL SECURITY FENCE IS INSTALLED, PORTION OF LOD IS RESTABILIZED/SEEDED, AND CORRESPONDING SILT FENCE REMOVED. SEE SHEET CE-503 FOR TYPICAL DETAIL.

GRAPHIC SCALE IN FEET
0 25 50 100

Jacobs

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COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402057995
11/14/2025
PROFESSIONAL ENGINEER

KHA PROJECT 113706001
DATE 11/14/2025
SCALE AS SHOWN
DESIGNED BY STM
DRAWN BY STM
CHECKED BY JMM

PHASE II EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-109

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-109 PHASE II EROSION AND SEDIMENT CONTROL November 09, 2025 01:27:17pm
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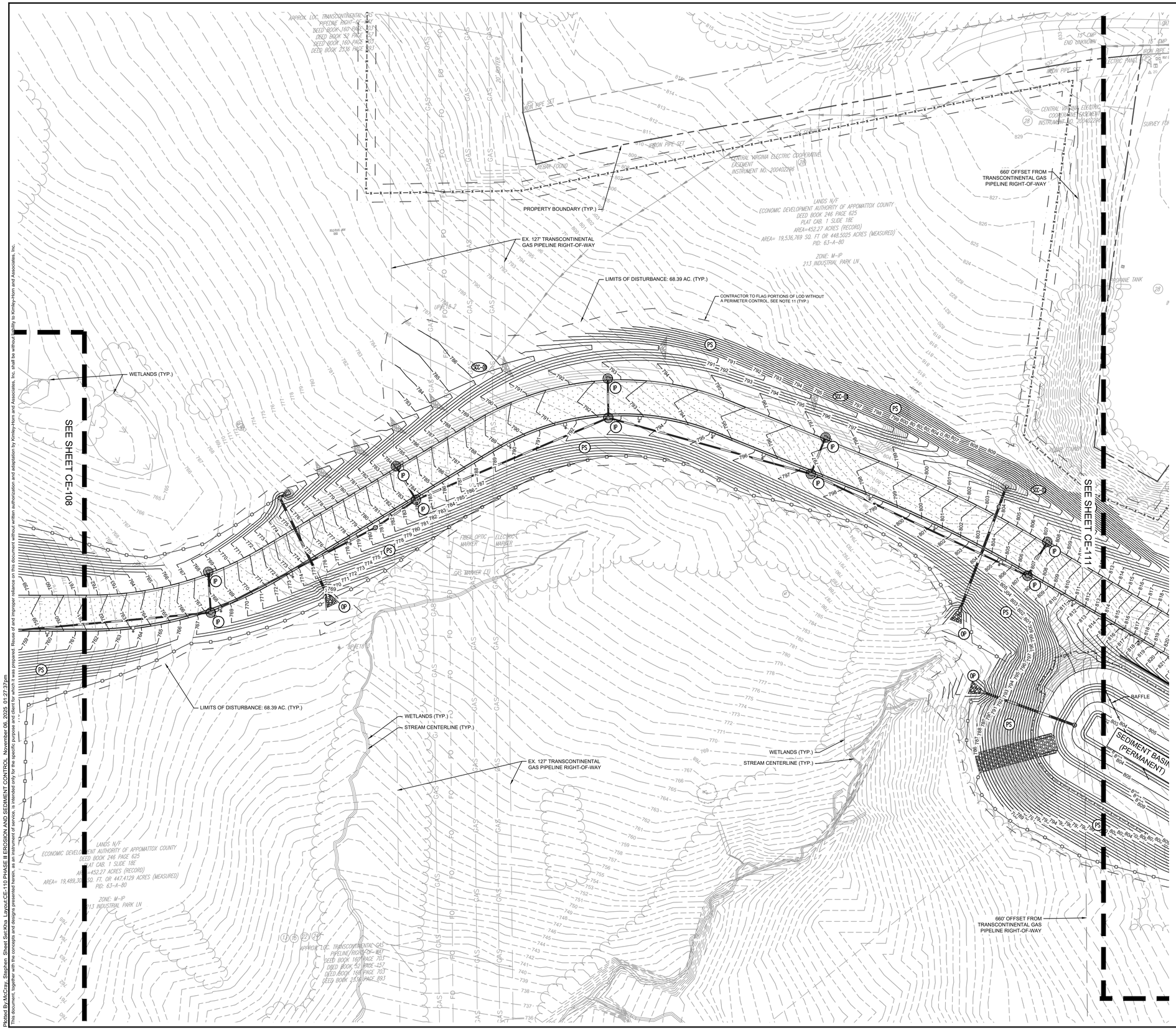

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

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SF	SILT FENCE
SSF	SUPER SILT FENCE
IP	INLET PROTECTION
CIP	CULVERT INLET PROTECTION
DD	DIVERSION DIKE
FD	FILL DIVERSION
ST	SEDIMENT TRAP
SB	SEDIMENT BASIN
OP	OUTLET PROTECTION
CD	ROCK CHECK DAM
TS	TEMPORARY SEEDING
PS	PERMANENT SEEDING
BM	BLANKET MATTING
	LIMITS OF DISTURBANCE
SC-W	STORMWATER CONVEYANCE CHANNEL
	DRAINAGE AREA BOUNDARY
	DIVERSION BOUNDARY
	"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

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2. SEE SHEETS CE-100 THROUGH CE-504 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
3. SEE SHEETS CP-501 AND CP-502 FOR PLANTING BED AND SODDING DETAILS.
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COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402057995
11/14/2025
PROFESSIONAL ENGINEER

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE II EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-110

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VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

CE	CONSTRUCTION ENTRANCE
SF	SILT FENCE
SSF	SUPER SILT FENCE
IP	INLET PROTECTION
CIP	CULVERT INLET PROTECTION
DD	DIVERSION DIKE
FD	FILL DIVERSION
ST	SEDIMENT TRAP
SB	SEDIMENT BASIN
OP	OUTLET PROTECTION
CD	ROCK CHECK DAM
TS	TEMPORARY SEEDING
PS	PERMANENT SEEDING
BM	BLANKET MATTING
	LIMITS OF DISTURBANCE
SC-W	STORMWATER CONVEYANCE CHANNEL
	DRAINAGE AREA BOUNDARY
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JOSH M MACDONALD
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11/14/2025
PROFESSIONAL ENGINEER

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE II EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

VA

APPOMATTOX COUNTY

SHEET NUMBER
CE-111

Plotted By: McCray, Stephen Sheet Set: Kha Layout: CE-111 PHASE II EROSION AND SEDIMENT CONTROL November 09, 2025 01:27:56pm
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VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL

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x x x	SF	SILT FENCE
	SSF	SUPER SILT FENCE
	IP	INLET PROTECTION
	CIP	CULVERT INLET PROTECTION
	DD	DIVERSION DIKE
	FD	FILL DIVERSION
ST	ST	SEDIMENT TRAP
SB	SB	SEDIMENT BASIN
	OP	OUTLET PROTECTION
	CD	ROCK CHECK DAM
TS	TS	TEMPORARY SEEDING
PS	PS	PERMANENT SEEDING
	BM	BLANKET MATTING
		LIMITS OF DISTURBANCE
SCC-W		STORMWATER CONVEYANCE CHANNEL
		DRAINAGE AREA BOUNDARY
		DIVERSION BOUNDARY
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GRAPHIC SCALE IN FEET
0 25 50 100

Jacobs

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11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PHASE II EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-112

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-112 PHASE II EROSION AND SEDIMENT CONTROL November 05, 2025 01:28:11 pm
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	LIMITS OF DISTURBANCE
SC-W	STORMWATER CONVEYANCE CHANNEL
	DRAINAGE AREA BOUNDARY
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EROSION AND SEDIMENT CONTROL NOTES

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PROFESSIONAL ENGINEER

KHA PROJECT	113706001
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SCALE	AS SHOWN
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DRAWN BY	STM
CHECKED BY	JMM

PHASE II EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-113

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-113 PHASE II EROSION AND SEDIMENT CONTROL November 06, 2025 01:28:24pm
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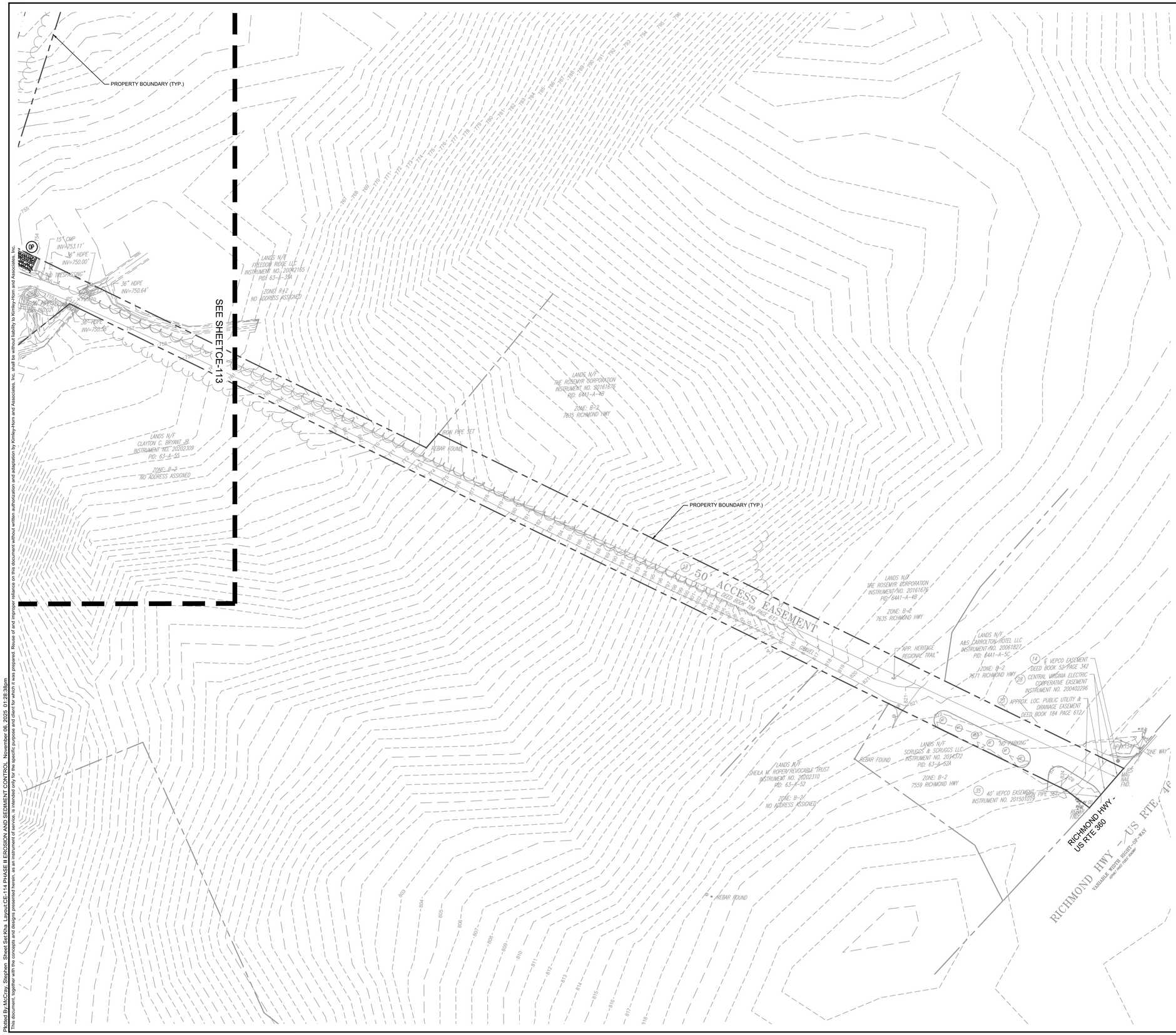

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BM	BLANKET MATTING
	LIMITS OF DISTURBANCE
SC(W)	STORMWATER CONVEYANCE CHANNEL
	DRAINAGE AREA BOUNDARY
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	"J-HOOK" SILT FENCE

EROSION AND SEDIMENT CONTROL NOTES

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PHASE II EROSION AND SEDIMENT CONTROL

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-114

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-114 PHASE II EROSION AND SEDIMENT CONTROL November 06, 2025 01:28:38pm
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PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF IMPROVEMENTS ASSOCIATED WITH A NEW DATA HUB TO BE LOCATED IN APPOMATTOX COUNTY, VIRGINIA. THE SITE AREA IS 452.27 ACRES (RECORD), AND THE DISTURBED AREA IS 68.39 AC.

PROPOSED IMPROVEMENTS INCLUDE A DATA CENTER BUILDING AND SUBSTATION WITH ASSOCIATED DRIVE AISLES, PERIMETER FENCE, PARKING AREAS, CURBING, WATER AND SEWER SYSTEMS, AND STORM DRAINAGE SYSTEMS. SITE WORK INCLUDES CLEARING AND GRADING, UTILITY INSTALLATIONS, PAVING, AND LANDSCAPING.

ACCESS TO THE BUILDING PAD WILL BE PROVIDED FROM A PROPOSED ENTRANCE ON INDUSTRIAL PARK ROAD ON THE NORTHERN SIDE OF THE SITE. ACCESS TO THE SOUTHEAST SUBSTATION PAD WILL BE PROVIDED OFF OF ROUTE 460 THROUGH AN EXISTING ACCESS DRIVE.

EXISTING SITE CONDITIONS

CURRENTLY, THE SITE IS UNDEVELOPED. THE MAJORITY OF THE EXISTING SITE IS FORESTED/OPEN SPACE, PASTURE, AND MANAGED TURF.

EXISTING ELEVATIONS RANGE FROM APPROXIMATELY 700 FEET TO 850 FEET WITH RELATIVELY STEEP SLOPES THROUGHOUT THE CENTER OF THE PROPERTY. THE EXISTING SITE IS LESS THAN 1% IMPERVIOUS WITH TYPE B, C, AND D SOILS. CURRENTLY, THE MAJORITY OF THE SITE COLLECTS INTO STREAMS AND WETLANDS IN THE CENTER OF THE PROPERTY WHICH DRAIN WEST TOWARDS A FLOODPLAIN.

ADJACENT AREAS

THE SUBJECT SITE IS BORDERED BY OAKVILLE ROAD TO THE NORTHEAST, WEST RIDGE LANE TO THE NORTH, APPOMATTOX COUNTY LAND TO THE WEST, POLICE TOWER ROAD TO THE SOUTHWEST, AND RESIDENTIAL TO THE SOUTHEAST.

OFF-SITE AREAS

OFF-SITE LAND DISTURBANCE IS LIMITED TO UTILITY CONNECTIONS AND CURB TIE-INS ALONG INDUSTRIAL PARK ROAD.

SOILS

FOR DETAILED SOILS INFORMATION, REFER TO THE THE FINAL GEOTECHNICAL REPORT (CURRENTLY BEING PREPARED BY ECS.)

CRITICAL AREAS

WETLANDS AND STREAMS ARE PRESENT ON SITE BUT ARE NOT TO BE IMPACTED.

PERMANENT STABILIZATION

PERMANENT STABILIZATION SHALL BE PROVIDED BY THE SITE CONTRACTOR AND WILL BE ACHIEVED WITH SEEDING OR SODDING AS SHOWN ON THE LANDSCAPING PLAN SHEET FOR ALL VEGETATED AREAS. CONCRETE, PAVEMENT, AND OTHER IMPERVIOUS SURFACES WILL STABILIZE THE REMAINDER OF THE SITE.

SOIL STOCKPILE NOTE

APPROXIMATE STOCKPILE AREAS HAVE BEEN DESIGNATED ON SHEETS CE-101 THROUGH CE-107.

STOCKPILING - TOPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE SHALL RESULT. STABILIZE OR PROTECT STOCKPILES IN ACCORDANCE WITH MINIMUM STANDARD #2. THE SIDE SLOPES OF THE STOCKPILE SHALL NOT EXCEED 2H:1V. PERIMETER CONTROLS MUST BE PLACED AROUND THE STOCKPILE IMMEDIATELY. SEEDING OF STOCKPILES SHALL BE COMPLETED WITHIN 7 DAYS OF THE FORMATION OF THE STOCKPILE, IN ACCORDANCE WITH STD. AND SPEC. C-SSM-09 (TEMPORARY SEEDING). IF IT IS TO REMAIN DORMANT FOR LONGER THAN 14 DAYS (REFER TO MINIMUM STANDARD #1 AND #2).

MAINTENANCE

BETWEEN THE TIME THE EROSION CONTROL PLAN IS IMPLEMENTED AND FINAL SITE STABILIZATION IS ACHIEVED, ALL DISTURBED AREAS AND EROSION CONTROLS MUST BE INSPECTED AT LEAST ONCE EVERY 5 BUSINESS DAYS; OR AT LEAST ONCE EVERY 10 BUSINESS DAYS AND NO LATER THAN 24 HOURS FOLLOWING A MEASURABLE STORM EVENT.

EXAMPLES OF PARTICULAR ITEMS TO BE EVALUATED DURING SITE INSPECTIONS ARE LISTED BELOW. THIS LIST IS NOT INTENDED TO BE COMPREHENSIVE. DURING EACH INSPECTION, EACH INSPECTOR MUST EVALUATE OVERALL EROSION CONTROL SYSTEM PERFORMANCE, AS WELL AS THE EFFECTIVENESS OF SYSTEM COMPONENTS. ADDITIONAL FACTORS SHOULD BE CONSIDERED AS APPROPRIATE TO THE CIRCUMSTANCES.

- LOCATIONS WHERE VEHICLES ENTER AND EXIT THE SITE MUST BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. A STABILIZED CONSTRUCTION ENTRANCE WILL BE CONSTRUCTED WHERE VEHICLES ENTER AND EXIT. THIS ENTRANCE WILL BE MAINTAINED OR SUPPLEMENTED AS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE SITE ON VEHICLES. SEDIMENT TRACKED ONTO PUBLIC ROADWAYS MUST BE SHOVELED OR SWEPT FROM THE ROADWAY AND RE-DEPOSITED ON SITE IN A MANNER THAT MINIMIZES ITS OFFSITE RELEASE POTENTIAL.
- SEDIMENT BARRIERS MUST BE INSPECTED AND, IF NECESSARY, THEY MUST BE ENLARGED OR CLEANED IN ORDER TO PROVIDE ADDITIONAL CAPACITY. ALL MATERIAL EXCAVATED FROM BEHIND SEDIMENT BARRIERS SHALL BE STOCKPILED ON THE UP SLOPE SIDE OF THE BARRIER. ADDITIONAL SEDIMENT BARRIERS MUST BE CONSTRUCTED AS NEEDED.
- INSPECTIONS WILL EVALUATE DISTURBED AREAS AND AREAS USED FOR STORING MATERIALS THAT ARE EXPOSED TO RAINFALL FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. IF NECESSARY, THE MATERIALS MUST BE COVERED OR ORIGINAL COVERS MUST BE REPAIRED OR SUPPLEMENTED. ALSO, PROTECTIVE BERMS MUST BE CONSTRUCTED, IF NEEDED, IN ORDER TO CONTAIN RUNOFF FROM MATERIAL STORAGE AREAS.
- GRASSED AREAS WILL BE INSPECTED TO CONFIRM THAT A HEALTHY STAND OF GRASS IS MAINTAINED. THE SITE HAS ACHIEVED FINAL STABILIZATION WHEN TURF GRASS COVER PROVIDES PERMANENT STABILIZATION OF THE SOIL SURFACE EXCLUSIVE OF AREAS THAT HAVE BEEN PAVED OR COVERED BY BUILDING(S). PERMANENT STABILIZATION IS NOT CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- ALL DISCHARGE POINTS MUST BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING IMPACTS TO RECEIVING WATERS.

BASED UPON THE RESULTS OF THE INSPECTIONS, EACH EROSION AND SEDIMENT CONTROL MEASURE SHALL BE REPAIRED AND/OR MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE REQUIREMENTS SPECIFIED IN THE CORRESPONDING SECTION OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK. THE CONTRACTOR SHALL MAINTAIN A COPY OF THIS HANDBOOK ON SITE AT ALL TIMES DURING CONSTRUCTION.

EROSION CONTROL MEASURES

THE FOLLOWING EROSION CONTROL MEASURES AS SHOWN ON THE EROSION CONTROL PLAN SHEET(S) OF THE SITE PLAN WILL BE USED FOR THIS PROJECT:

C-PCM-01 SAFETY FENCE - SAFETY FENCE WILL BE INSTALLED AROUND THE PERIMETER OF THE SITE. THE PURPOSE OF THIS PRACTICE IS TO PREVENT UNDESIRABLE ACCESS AND USE OF AN EROSION CONTROL DEVICE BY THE PUBLIC.

C-SCM-03 TEMPORARY STONE CONSTRUCTION ENTRANCE - A STABILIZED STONE PAD WITH A FILTER FABRIC UNDERLINER WILL BE PROVIDED AT THE PRIMARY CONSTRUCTION ACCESS POINT. THE PURPOSE OF THIS PRACTICE IS TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PAVED PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

C-PCM-04 SILT FENCE - A TEMPORARY SEDIMENT BARRIER CONSISTING OF A SYNTHETIC FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED WILL BE PROVIDED AROUND MUCH OF THE SITE PERIMETER AND PARALLEL TO SLOPED AREAS. THE PURPOSE OF THIS PRACTICE IS TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

SUPER SILT FENCE - A TEMPORARY SEDIMENT BARRIER CONSISTING OF A CHAIN LINK FENCE WITH A LAYER OF FILTER FABRIC ATTACHED AND ENTRENCHED. PLEASE REFER TO THE DETAIL ON SHEET CE-502.

C-SCM-04 STORM DRAIN INLET PROTECTION - A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET WILL BE PROVIDED AT ALL INLET LOCATIONS WITHIN THE LIMITS OF DISTURBANCE. THE PURPOSE OF THIS PRACTICE IS TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

C-SCM-05 CULVERT INLET PROTECTION - A SEDIMENT FILTER LOCATED AT THE INLET TO STORM SEWER CULVERTS THE PURPOSE OF THIS PRACTICE IS TO PREVENT SEDIMENT FROM ENTERING IN, ACCUMULATING IN AND BEING TRANSFERRED BY A CULVERT AND ASSOCIATED DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF A DISTURBED PROJECT AREA. IT CAN ALSO BE USED TO PROVIDE EROSION CONTROL AT CULVERT INLETS DURING THE PHASE OF A PROJECT WHERE ELEVATION AND DRAINAGE PATTERNS CHANGE, CAUSING ORIGINAL CONTROL MEASURES TO BE INEFFECTIVE OR IN NEED OF REMOVAL.

C-ECM-04 TEMPORARY DIVERSION DIKE - AN EARTHEN BERM CONSTRUCTED ALONG A SLOPE TO DIVERT WATER INTO OR AWAY FROM SEDIMENT TREATMENT DEVICES. DIVERSION DIKES SERVE TO COLLECT SEDIMENT LADEN WATER AND DIRECT IT TO APPROPRIATE SEDIMENT TRAPS OR BASINS, AS WELL AS TO PREVENT CLEAN OFFSITE WATER FROM RUNNING OVER DISTURBED AREA AND BECOMING SEDIMENT LADEN.

C-ECM-05 DIVERSION - A CHANNEL CONSTRUCTED ACROSS A SLOPE WITH A SUPPORTING EARTHEN RIDGE ON THE LOWER SIDE. THE PURPOSE OF THIS PRACTICE IS TO REDUCE SLOPE LENGTH AND TO INTERCEPT AND DIVERT STORMWATER RUNOFF TO STABILIZED OUTLETS AT NON-EROSIVE VELOCITIES.

C-ECM-06 TEMPORARY FILL DIVERSION - A CHANNEL WITH A SUPPORTING RIDGE OF SOIL ON THE LOWER SIDE, CONSTRUCTED ALONG THE TOP OF AN ACTIVE EARTH FILL. TEMPORARY FILL DIVERSIONS ARE USED TO DIVERT STORM RUNOFF AWAY FROM THE UNPROTECTED SLOPE OF THE FILL TO A STABILIZED OUTLET OR SEDIMENT TRAPPING FACILITY.

C-SCM-11 SEDIMENT TRAP - A TEMPORARY PONDING AREA FORMED BY CONSTRUCTING AN EARTHEN EMBANKMENT WITH A STONE OUTLET. THE PURPOSE IS TO DETAIN SEDIMENT-LADEN RUNOFF FROM SMALL DISTURBED AREAS LONG ENOUGH TO ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT.

C-SCM-12 SEDIMENT BASIN - SEDIMENT BASINS FUNCTION TO DETAIN SEDIMENT LADEN RUNOFF FROM DISTURBED AREAS IN WET AND DRY STORAGE LONG ENOUGH TO ALLOW THE MAJORITY OF SEDIMENT TO SETTLE OUT.

C-ECM-15 OUTLET PROTECTION - STRUCTURALLY LINED APRONS OR OTHER ACCEPTABLE ENERGY DISSIPATING DEVICES PLACED AT THE OUTLETS OF PIPES AND PAVED CHANNELS. THE PURPOSE IS TO PREVENT SCOUR AT STORMWATER OUTLETS, TO PROTECT THE OUTLET STRUCTURE, AND TO MINIMIZE THE POTENTIAL FOR DOWNSTREAM EROSION BY REDUCING THE VELOCITY AND ENERGY OF CONCENTRATED STORMWATER FLOWS.

C-SCM-07 ROCK CHECK DAM - SMALL TEMPORARY STONE DAMS CONSTRUCTED ACROSS A SWALE OR DRAINAGE DITCH. THE PURPOSE IS TO REDUCE THE VELOCITY OF CONCENTRATED STORMWATER FLOWS, THEREBY REDUCING EROSION OF THE SWALE OR DITCH. THIS PRACTICE ALSO TRAPS SEDIMENT GENERATED FROM ADJACENT AREAS OR THE DITCH ITSELF, MAINLY BY PONDING OF THE STORMWATER RUNOFF. FIELD EXPERIENCE HAS SHOWN IT TO PERFORM MORE EFFECTIVELY THAN SILT FENCE OR STRAW BALES IN THE EFFORT TO STABILIZE "WET-WEATHER" DITCHES.

C-SSM-09 TEMPORARY SEEDING - THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS WILL BE PROVIDED ON ALL DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN 14 DAYS. TEMPORARY SEEDING SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN LONGER THAN 14 DAYS AS PER MS-1. THE PURPOSE OF THIS PRACTICE IS TO PROVIDE PROTECTION TO BARE SOILS EXPOSED DURING CONSTRUCTION UNTIL PERMANENT VEGETATION OR OTHER EROSION CONTROL MEASURES CAN BE ESTABLISHED.

C-SSM-10 PERMANENT SEEDING - THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS BY PLANTING SEED WILL BE PROVIDED AS SHOWN ON THE LANDSCAPING PLAN. PERMANENT SEEDING SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED AS PER MS-1. THE PURPOSE OF THIS PRACTICE IS TO REDUCE EROSION AND DECREASE SEDIMENT YIELD FROM DISTURBED AREAS AND TO PERMANENTLY STABILIZE DISTURBED AREAS IN A MANNER THAT IS ECONOMICAL, ADAPTABLE TO SITE CONDITIONS, AND ALLOWS SELECTION OF THE MOST APPROPRIATE PLANT MATERIALS.

C-SSM-06 SODDING: STABILIZATION OF FINE-GRADED DISTURBED AREAS BY ESTABLISHING PERMANENT GRASS STANDS WITH SOD WILL BE PROVIDED FOR ALL AREAS ON-SITE AS SHOWN ON THE LANDSCAPING PLAN. THE PURPOSE OF THIS PRACTICE IS TO ESTABLISH PERMANENT TURF IMMEDIATELY AND TO PREVENT EROSION AND DAMAGE FROM SEDIMENT AND RUNOFF BY STABILIZING THE SOIL SURFACE.

C-SSM-05 SOIL STABILIZATION BLANKET AND MATTING - TO BE INSTALLED AS DENOTED ON THE PLANS. THE PURPOSE IS TO AID IN CONTROLLING EROSION ON CRITICAL AREAS BY PROVIDING A MICROCLIMATE WHICH PROTECTS YOUNG VEGETATION AND PROMOTES ITS ESTABLISHMENT.

C-SSM-01 TREE PROTECTION: PROTECTION OF DESIRABLE TREES FROM MECHANICAL AND OTHER INJURY DURING LAND DISTURBING AND CONSTRUCTION ACTIVITY. ENSURE THE SURVIVAL OF DESIRABLE TREES WHERE THEY WILL BE EFFECTIVE FOR EROSION AND SEDIMENT CONTROL, WATERSHED PROTECTION, LANDSCAPE BEAUTIFICATION, DUST AND POLLUTION CONTROL, NOISE REDUCTION, SHADE AND OTHER ENVIRONMENTAL BENEFITS WHILE THE LAND IS BEING CONVERTED FROM FOREST TO URBAN-TYPE USES.

MS-19 MINIMUM STANDARDS

MS-1 PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-2 DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-3 A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

MS-4 SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

MS-5 STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6 SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.

MS-7 CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

MS-8 CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

MS-9 WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10 ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

MS-11 BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12 WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

MS-13 WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

MS-14 ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

MS-15 THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

MS-16 UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.
F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.

MS-17 WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL
DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

MS-18 ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

MS-19 PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS:

A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.

B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:
(1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR
(2)(A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.
(B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND
(C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.

C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:
(1) IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO CHANNEL THE BED OR BANKS; OR
(2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;
(3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PREDEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MANMADE CHANNEL; OR
(4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.

D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.

E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.

F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.

G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.

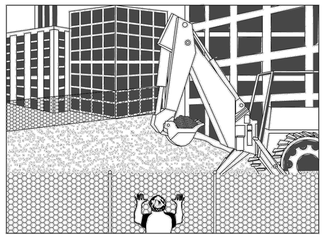
H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.

I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.

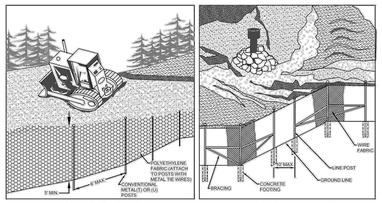
J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.

K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (i) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS;
(II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND
(III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING I



PERSPECTIVE VIEW

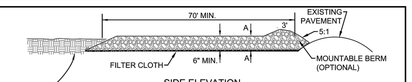


PERSPECTIVE VIEW
PLASTIC FENCE

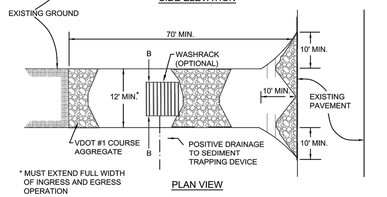
PERSPECTIVE VIEW
METAL FENCE

SAFETY FENCE

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VDOT STDS., VA DSWC, CONWED PLASTICS | C-PCM-01-1

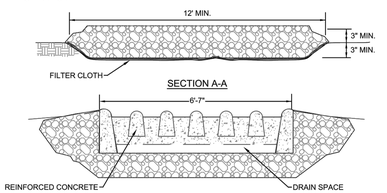


SIDE ELEVATION



* MUST EXTEND FULL WIDTH OF INGRESS AND EGRESS OPERATION

PLAN VIEW

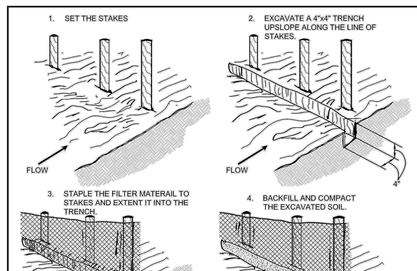


SECTION A-A

SECTION B-B

STONE CONSTRUCTION ENTRANCE

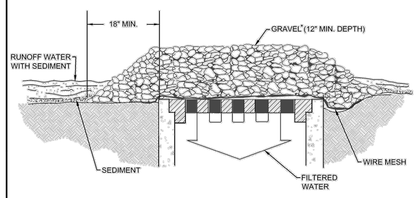
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA. DSWC, MD ESC STDS | C-SCM-03-1



DRAINAGEWAY INSTALLATION
(FRONT ELEVATION)

CONSTRUCTION OF SILT FENCE WITHOUT WIRE SUPPORT

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: ADAPTED FROM STRAW & FAB. BARRIERS, SHERWOOD & WYANT | C-PCM-04-2B



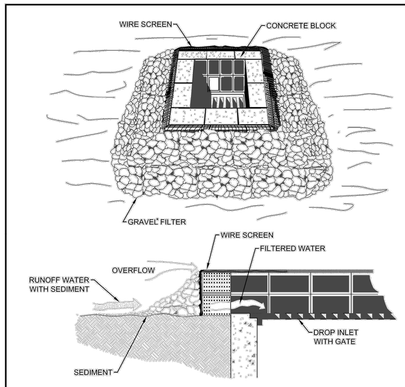
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA. DSWC | C-SCM-04-2



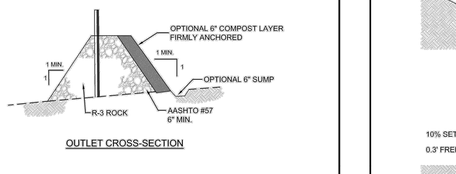
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

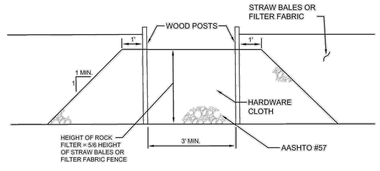
* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA. DSWC | C-SCM-04-3



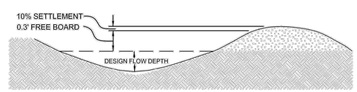
OUTLET CROSS-SECTION



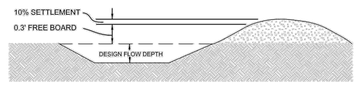
UP-SLOPE FACE

ROCK FILTER OUTLET DETAIL

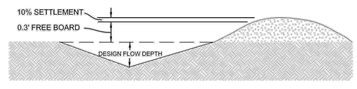
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: PA DEP | C-SCM-08-1



TYPICAL PARABOLIC DIVERSION



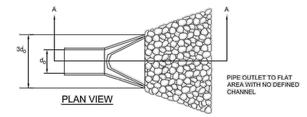
TYPICAL TRAPEZOIDAL DIVERSION



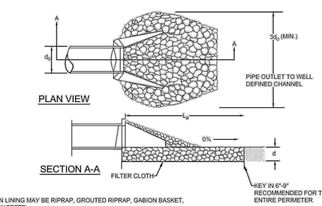
TYPICAL VEE-SHAPED DIVERSION

DIVERSION CROSS-SECTIONS

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA. DSWC | C-ECM-05-1



SECTION A-A

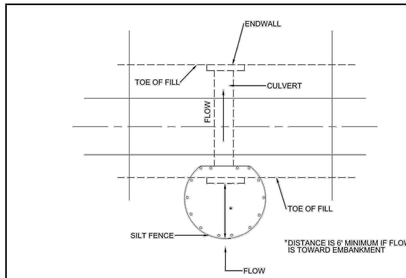


SECTION A-A

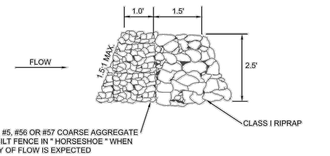
NOTES:
1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING FIGURE C-ECM-15-3 AND FIGURE C-ECM-15-4
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NO LESS THAN 6 INCHES.

PIPE OUTLET CONDITIONS

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA DSWC | C-ECM-15-1



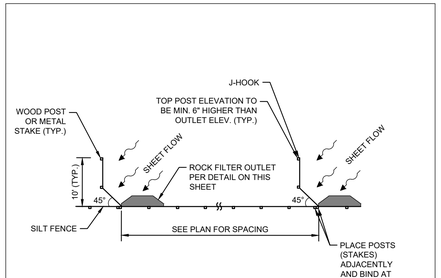
OPTIONAL STONE COMBINATION **



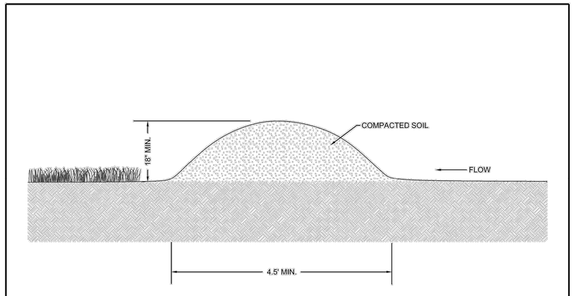
**VDOT #3, #357, #5, #56 OR #57 COARSE AGGREGATE TO REPLACE SILT FENCE IN " HORSESHOE " WHEN HIGH VELOCITY OF FLOW IS EXPECTED

SILT FENCE CULVERT INLET PROTECTION

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA, DSWC, VDOT | C-SCM-05-1

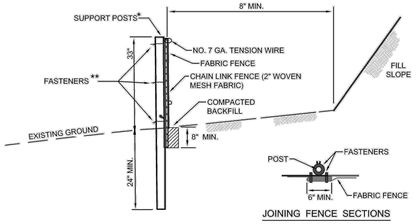


"J-HOOK" SILT FENCE



TEMPORARY DIVERSION DIKE

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA. DSWC | C-ECM-04-1



JOINING FENCE SECTIONS

* POSTS SPACED @ 10' MAX. USE 2 1/2" DIA. HEAVY DUTY GALVANIZED OR ALUMINUM POSTS.

* * CHAIN LINK TO POST FASTENERS SPACED @ 14" MAX. USE NO. 9 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL PRE-FORMED CLIPS. CHAIN LINK TO TENSION WIRE FASTENERS SPACED @ 60" MAX. USE NO. 13.5 GA. GALVANIZED STEEL WIRE. FABRIC TO CHAIN FASTENERS SPACED @ 24" MAX C. TO C.

SUPER SILT FENCE INSTALLATION

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: ADAPTED FROM PA DEP 2012 | C-PCM-04-3

Jacobs

Kimley»Horn

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WWW.KIMLEY-HORN.COM

COMMONWEALTH OF VIRGINIA
JOSIH M MACDONALD
Lic. No. 0402057995
11/14/2025
PROFESSIONAL ENGINEER

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

EROSION AND SEDIMENT CONTROL DETAILS

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CE-502

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-502 EROSION AND SEDIMENT CONTROL DETAILS November 05, 2025 04:23:41pm
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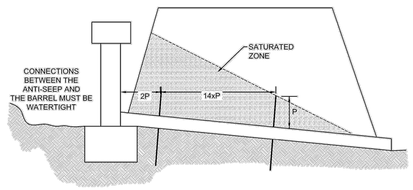
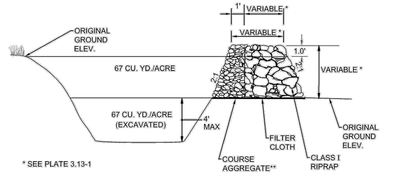


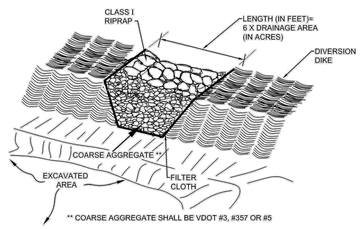
ANTI-SEEP COLLAR

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA. DSWC | C-SCM-12-4



* SEE PLATE 3.13-1

CROSS SECTION OF OUTLET

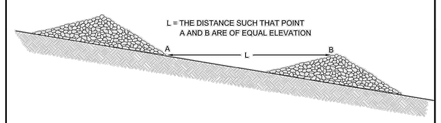


** COARSE AGGREGATE SHALL BE VDOT #3, #357 OR #5

OUTLET (PERSPECTIVE VIEW)

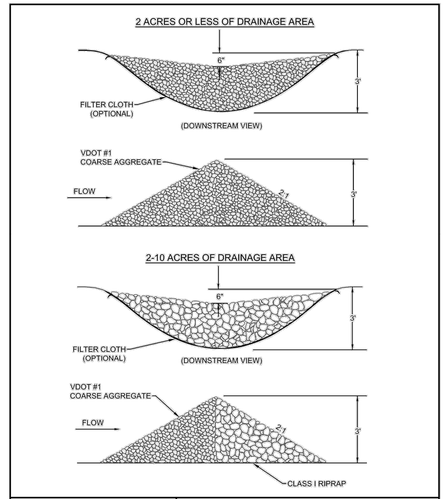
TEMPORARY SEDIMENT TRAP

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA. DSWC | C-SCM-11-2



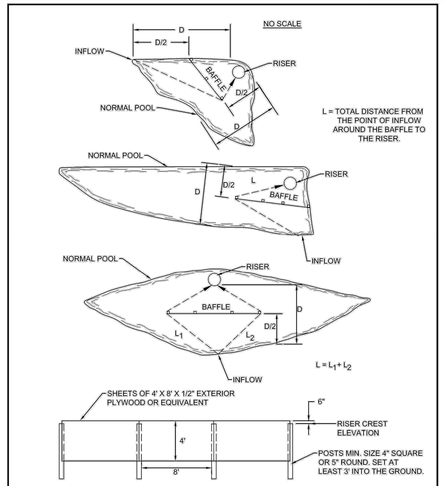
SPACING BETWEEN ROCK CHECK DAMS

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: DSWC | C-SCM-07-2



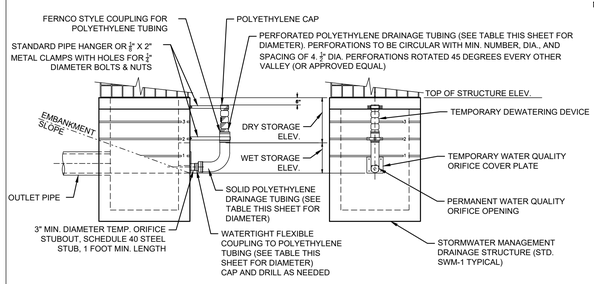
ROCK CHECK DAM

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: VA. DSWC | C-SCM-07-1



EXAMPLE PLAN VIEWS OF BAFFLE LOCATIONS IN SEDIMENT BASINS

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SOURCE: USDA-SCS | C-SCM-12-6

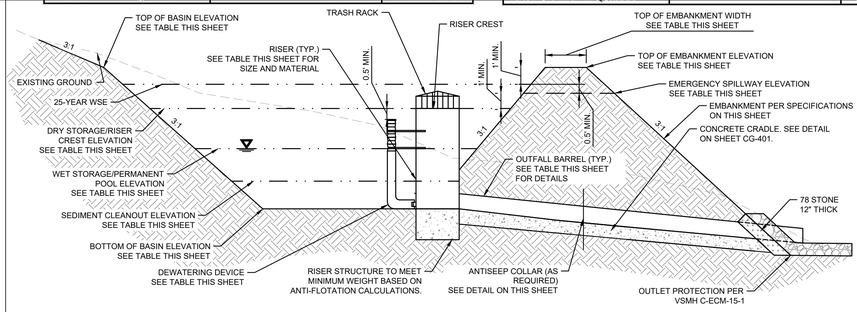


SIDE VIEW (TYPICAL DETAILS) | FRONT VIEW (TYPICAL DETAILS)

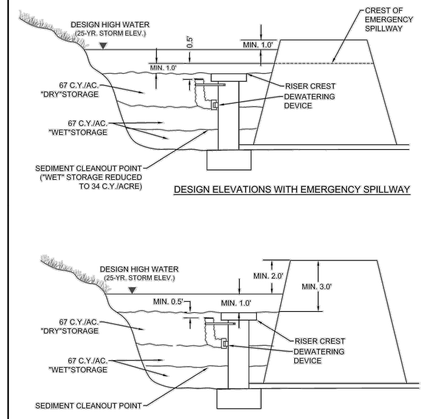
NOTES:
1. THESE DETAILS ARE TO BE USED TO MODIFY THE PERMANENT STORMWATER MANAGEMENT DRAINAGE STRUCTURE WHERE THE STORMWATER MANAGEMENT BASIN IS TO BE USED FOR A TEMPORARY SEDIMENT BASIN DURING PROJECT CONSTRUCTION.
2. GRADE STORMWATER MANAGEMENT BASIN AS SHOWN IN PLANS.
3. ALL OPENINGS (IF ANY) IN SIDE OF STRUCTURE (OTHER THAN PERMANENT WATER QUALITY ORIFICE) ARE TO BE COVERED WITH SOLID METAL PLATES WHILE THE BASIN IS BEING USED FOR SEDIMENT CONTROL.
4. DEWATERING DEVICE AND COMPONENTS AND TEMPORARY METAL PLATES (IF ANY), AS SHOWN IN THE DETAIL, ARE TO BE REMOVED AND PERMANENT STEEL PLATE WITH WATER QUALITY ORIFICE IS TO BE INSTALLED WHEN BASIN IS NO LONGER NEEDED FOR SEDIMENT CONTROL.
5. SIMILAR DEVICE MAY ALSO BE USED ON OTHER STORMWATER MANAGEMENT DRAINAGE STRUCTURES.
6. COST OF TEMPORARY DEWATERING DEVICE AND TEMPORARY METAL PLATES (IF ANY) SHALL BE INCLUDED IN THE BID PRICE FOR STORMWATER MANAGEMENT DRAINAGE STRUCTURE.
7. THE TEMPORARY POLYETHYLENE DRAINAGE TUBING IS TO BE SOLID FOR THE LENGTH BELOW WET STORAGE ELEVATION AND IS TO BE PERFORATED ABOVE THE WET STORAGE ELEVATION. THE COUPLING IS TO BE WATERTIGHT.

NOTE: DRAINAGE TUBING SHALL COMPLY WITH ASTM F667 OR AASHTO M294.

VDOT STORMWATER MANAGEMENT (SWM) DETAIL 302



TEMP. SEDIMENT BASIN CROSS SECTION WITH EMERGENCY SPILLWAY (NTS)



DESIGN ELEVATIONS WITH EMERGENCY SPILLWAY

DESIGN ELEVATIONS WITHOUT EMERGENCY SPILLWAY (RISER PASSES 25-YEAR EVENT)

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY | v1.1 | SEDIMENT BASIN SCHEMATIC ELEVATIONS | SOURCE: VA. DSWC | C-SCM-12-2

SEDIMENT BASIN DESIGN SUMMARY TABLE

BASIN INFORMATION				WET STORAGE				DRY STORAGE		RISER					DEWATERING			SPILLWAY			EMBANKMENT		BAFFLE			BARREL				
SEDIMENT BASIN NO.	SEDIMENT BASIN CONDITION	DRAINAGE AREA	BOTTOM OF BASIN ELEVATION	VOLUME REQUIRED	VOLUME PROVIDED	PERMANENT POOL ELEVATION	SEDIMENT CLEANOUT ELEVATION	VOLUME REQUIRED	VOLUME PROVIDED	DESIGN RISER DIAMETER	RISER SHAPE	CONSTRUCTION RISER SIZE	RISER CREST ELEVATION	RISER MATERIAL	MINIMUM WEIGHT OF RISER	ANTI-VORTEX DEVICE DIAMETER	DEWATERING DEVICE DIAMETER	DEWATERING TIME	DEWATERING DEVICE ELEVATION	EMERGENCY SPILLWAY ELEVATION	EMERGENCY SPILLWAY WIDTH	25-YR STORM WATER SURFACE ELEVATION	TOP OF EMBANKMENT ELEVATION	TOP OF EMBANKMENT WIDTH	BAFFLE LENGTH	TOP OF BAFFLE ELEVATION	FLOW/LENGTH TO WIDTH RATIO	PIPE LENGTH	PIPE DIAMETER	PIPE MATERIAL	INVERT IN	INVERT OUT
		AC	FT	CF	CF	FT	FT	CF	CF	IN		IN	FT		LBS	IN	IN	HR	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	IN		FT	FT
SB-A	PERM	27.86	707.00	50,399	145,324	711.00	710.00	50,399	307,894	(1) 60	Circular	(1) 60	713.50	RCP	9,797	96	2.9	56.7	711.00	715.00	15	714.49	718.00	8	166	714.00	1.98	180	(1) 30	RCP	707.00	706.09
SB-B	PERM	7.66	802.00	13,857	13,804	805.00	804.00	13,857	51,400	(1) 60	Circular	(1) 60	807.50	RCP	22,299	96	1.1	107.6	805.00	808.60	14	808.07	810.00	15	115	808.00	3.79	109	(1) 24	RCP	792.94	782.10
SB-C	PERM	25.05	760.00	45,315	72,062	764.00	763.00	45,315	211,954	(1) 60	Circular	(1) 60	767.60	RCP	11,181	96	3.0	39.7	764.00	769.35	24	768.82	771.00	8	107	768.10	2.26	293	(1) 30	RCP	760.00	758.18

*25-yr storm water surface elevation corresponds to the Ultimate Post Development condition which is more restrictive than the Phase I E&S (bare earth) condition

PHASE I E&S DITCH DESIGN SUMMARY TABLE

DITCH SECTION ID	DRAINAGE AREA	APPROX. LENGTH	C VALUE	TIME OF CONC.	I_2	I_{10}	I_{100}	Q_2	Q_{10}	Q_{100}	SLOPE	MANNING'S N	BOTTOM WIDTH	SIDE SLOPES L	SIDE SLOPES R	DESIGN DEPTH	2-YR DEPTH	2-YR VELOCITY	10-YR DEPTH	100-YR DEPTH	CHANNEL LINING	APPROX. CHK DAMS
	ACRES	FT		MIN	IN/HR	IN/HR	IN/HR	CFS	CFS	CFS	FT/FT		FT	FT/FT	FT/FT	FT	FT	FT/S	FT	FT		EA
DIV-1	7.27	722	0.50	20.87	2.80	3.79	5.11	10.16	13.78	18.58	0.01	0.02	5.0	3	3	1.0	0.40	4.09	0.48	0.56	EC-3	20
DIV-2	9.06	432	0.50	13.93	3.42	4.59	6.10	15.51	20.79	27.65	0.02	0.02	1.0	3	3	2.0	0.77	6.05	0.88	0.99	EC-3	6
DIV-3	15.60	818	0.50	14.00	3.42	4.58	6.09	26.64	35.72	47.52	0.02	0.02	1.0	3	3	2.0	1.04	6.23	1.18	1.32	EC-3	9

*Manning's N-value of 0.02 corresponds to "bare earth" land cover
*Rational Coefficient corresponds to bare earth land cover condition

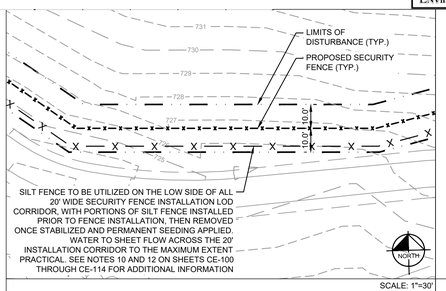
PHASE II E&S AND POST DEVELOPMENT DITCH DESIGN SUMMARY TABLE

DITCH SECTION ID	DRAINAGE AREA	APPROX. LENGTH	C VALUE	TIME OF CONC.	I_2	I_{10}	I_{100}	Q_2	Q_{10}	Q_{100}	SLOPE	MANNING'S N	BOTTOM WIDTH	SIDE SLOPES L	SIDE SLOPES R	DESIGN DEPTH	2-YR DEPTH	2-YR VELOCITY	10-YR DEPTH	100-YR DEPTH	CHANNEL LINING	APPROX. CHK DAMS
	ACRES	FT		MIN	IN/HR	IN/HR	IN/HR	CFS	CFS	CFS	FT/FT		FT	FT/FT	FT/FT	FT	FT	FT/S	FT	FT		EA
SCC-01	7.79	800	0.44	20.80	2.80	3.80	5.12	9.60	13.02	17.54	0.01	0.02	5.0	3	3	1.0	0.39	4.01	0.46	0.54	EC-3	22
SCC-02	7.11	531	0.34	23.80	2.60	3.54	4.80	6.28	8.56	11.60	0.05	0.02	5.0	3	3	5.0	0.21	5.40	0.25	0.30	EC-3	6
SCC-03	8.34	1182	0.32	17.70	3.05	4.11	5.51	8.14	10.98	14.71	0.01	0.02	0.0	3	3	2.5	0.82	3.99	0.92	1.03	EC-2	6
SCC-04	6.69	680	0.73	5.00	4.93	6.49	8.51	24.09	31.68	41.55	0.01	0.02	0.0	3	3	2.5	1.24	5.23	1.37	1.52	EC-3	4
SCC-05	1.60	262	0.78	5.00	4.93	6.49	8.51	6.16	8.10	10.62	0.03	0.02	0.0	3	3	2.5	0.59	5.82	0.66	0.73	EC-3	5
SCC-06		94						9.98	42.39	73.32	0.05	0.02	0.0	3	3	2.5	0.68	7.36	1.15	1.42	EC-3	3

*Manning's N-value of 0.02 corresponds to "bare earth" land cover
*Rational Coefficient corresponds to most restrictive land cover type between Phase I E&S (bare earth) and the Ultimate Post Development condition
*SCC-06 was conservatively calculated by combining the flows from SCC-03 with the peak flows exiting Pond C

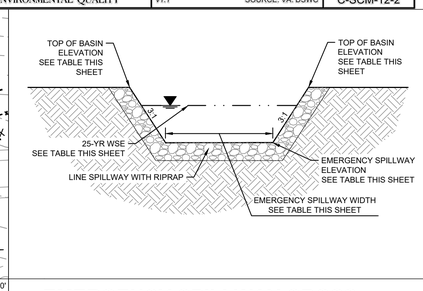
SEDIMENT TRAP DESIGN SUMMARY TABLE

SEDIMENT TRAP NO.	SEDIMENT TRAP CONDITION	DRAINAGE AREA	BOTTOM OF TRAP ELEVATION	WET STORAGE			DRY STORAGE			EMBANKMENT		DIMENSIONS					
				VOLUME REQUIRED	VOLUME PROVIDED	BASE OF OUTLET ELEVATION	VOLUME REQUIRED	VOLUME PROVIDED	TOP OF OUTLET ELEVATION	TOP OF EMBANKMENT ELEVATION	TOP OF EMBANKMENT WIDTH	WIDTH	LENGTH	SIDE SLOPES	OUTLET LENGTH	GRADED OPENING	
N/A	N/A	AC	FT	CF	CF	FT	CF	CF	FT	FT	FT	FT	FT	N/A	FT	FT	
ST-1	TEMP	2.87	730.50	5,192	6,591	732.00	5,192	8,491	733.50	734.50	8	40	100	3:1	17	22	
ST-2	TEMP	1.62	751.00	2,931	3,619	752.50	2,931	5,134	754.00	755.00	8	25	80	3:1	10	15	
ST-3	TEMP	2.96	766.50	5,355	9,391	768.00	5,355	11,508	769.50	770.50	8	61	95	3:1	18	23	
ST-4	TEMP	2.27	756.00	4,106	6,362	757.50	4,106	8,037	759.00	760.00	8	60	65	3:1	14	19	



SCALE: 1"=30'

ESC SECURITY FENCE TYP. DETAIL



EMERGENCY SPILLWAY CROSS SECTION

BASIN RIPRAP OUTLET PROTECTION SUMMARY

	OUTFALL NO.	OUTLET PIPE DIAMETER (D_O)	25-YR PEAK DISCHARGE (24 HRS)	TAILWATER CONDITION	APRON (PER BARREL) LENGTH (L_a)	APRON (PER BARREL) UPSTREAM WIDTH ($3D_O$)	APRON (PER BARREL) DOWN-STREAM WIDTH (W)	BARREL NUMBER OF BARRELS	BARREL SPACING	TOTAL APRON LENGTH (L_a)	TOTAL APRON UPSTREAM WIDTH ($3D_O$)	TOTAL APRON DOWN-STREAM WIDTH (W)	TOTAL APRON AREA OF APRON	STONE DIAMETER (d_{50})	STONE THICKNESS OF STONE (T)	STONE APPROX. STONE QUANTITY
		IN	CFS		FT	FT	FT	EA	FT	FT	FT	FT	SF	FT	FT	CY
SEDIMENT BASIN/WET POND A	PO-01	30	54.3	MIN	24.0	7.5	26.5	1		24.0	7.5	26.5	408	1.0	2.0	30
SEDIMENT BASIN/WET POND B	PO-02	24	22.4	MIN	14.0	6.0	16.0	1		14.0	6.0	16.0	154	0.5	1.0	6
SEDIMENT BASIN/WET POND C	S111	30	54.9	MIN	24.0	7.5	26.5	1		24.0	7.5	26.5	408	1.0	2.0	30

THE 25-YEAR PEAK DISCHARGE UTILIZED IS THE MORE CONSERVATIVE VALUE BETWEEN THE 25-YEAR PEAK FLOW LEAVING SEDIMENT BASINS A, B, AND C AND THEIR CORRESPONDING WET PONDS FOLLOWING CONVERSION.

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Plotted By: McCray, Stephen Sheet Set: Kha Layout: CE-503 EROSION AND SEDIMENT CONTROL DETAILS November 05, 2025 04:24:10pm

Jacobs

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COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402057995
PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

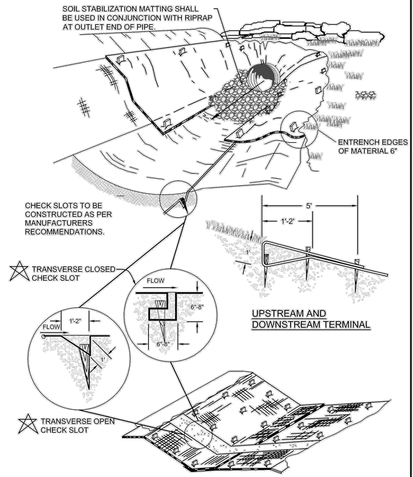
EROSION AND SEDIMENT CONTROL DETAILS

PROJECT HERCULES

VA

APPOMATTOX COUNTY

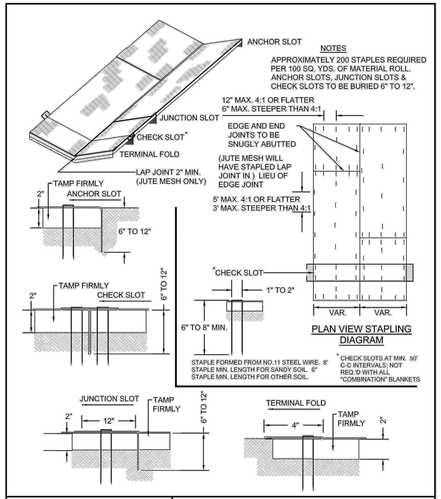
SHEET NUMBER
CE-503



DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TYPICAL TREATMENT - 2
SOIL STABILIZATION
MATTING INSTALLATION

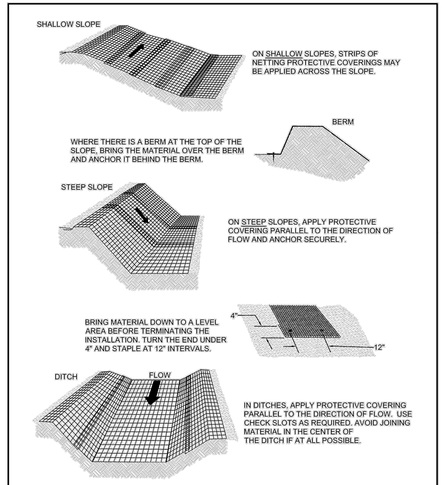
v1.1 SOURCE: VDOT ROAD & BRIDGE STDS. C-SSM-05-4



DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TYPICAL TREATMENT - 1
(SOIL STABILIZATION BLANKET)
INSTALLATION CRITERIA

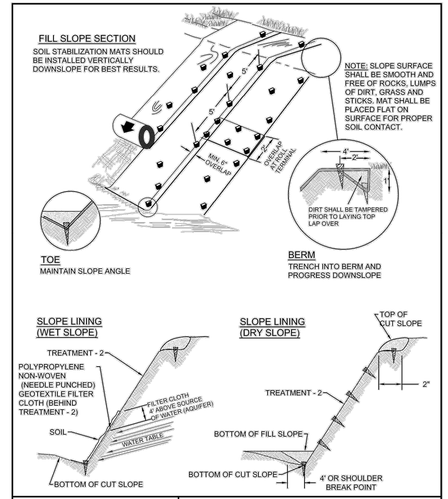
v1.1 SOURCE: VDOT ROAD & BRIDGE STDS. C-SSM-05-2



DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TYPICAL ORIENTATION OF
TREATMENT - 1
(SOIL STABILIZATION BLANKET)

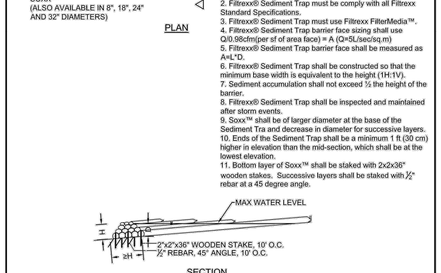
v1.1 SOURCE: ADAPTED FROM LUDLOW PRODUCTS BROCHURE C-SSM-05-1



DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TYPICAL TREATMENT - 2
SOIL STABILIZATION MATTING
SLOPE INSTALLATION

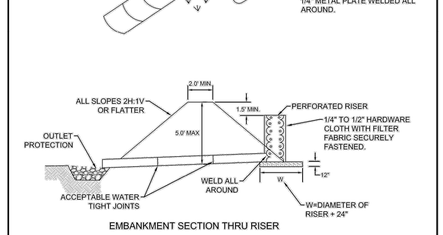
v1.1 SOURCE: VDOT ROAD & BRIDGE STDS. C-SSM-05-5



DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

COMPOST FILTER SOCK
SEDIMENT TRAP

v1.1 SOURCE: FILTREXX® C-SCM-11-3

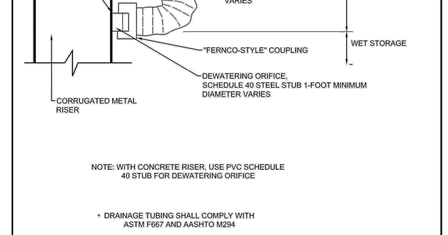


EMBANKMENT SECTION THRU RISER

DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TEMPORARY SEDIMENT TRAP
EMBANKMENT DETAIL

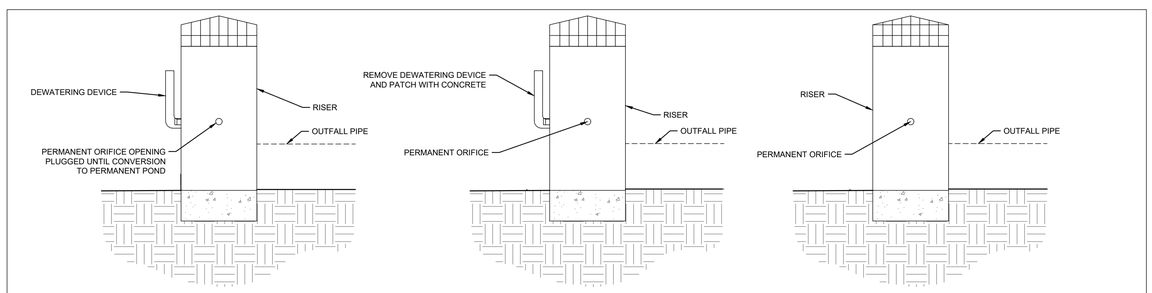
v1.1 SOURCE: NEW YORK ESC STANDARDS C-SCM-11-5



DEQ VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

RECOMMENDED DEWATERING SYSTEM
FOR SEDIMENT BASINS

v1.1 C-SCM-12-15



BASIN C: RISER CONVERSION FROM TEMP. SEDIMENT BASIN TO PERMANENT POND

CULVERT RIPRAP OUTLET PROTECTION SUMMARY

OUTFALL NO.	OUTLET PIPE DIAMETER (D_o)	10-YR PEAK DISCHARGE	TAILWATER CONDITION	APRON (PER BARREL)			BARREL		TOTAL APRON				STONE		
				APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_o$)	DOWN-STREAM WIDTH (W)	NUMBER OF BARRELS	BARREL SPACING	APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_o$)	DOWN-STREAM WIDTH (W)	AREA OF APRON	STONE DIAMETER (d_{50})	THICKNESS OF STONE (T)	APPROX. STONE QUANTITY
	IN	CFS		FT	FT	FT	EA	FT	FT	FT	FT	SF	FT	FT	CY
CU-102	24	13.0	MIN	11.0	6.0	13.0	1		11.0	6.0	13.0	105	0.5	1.0	4
CU-202	24	8.6	MIN	9.0	6.0	11.0	1		9.0	6.0	11.0	77	0.5	1.0	3

DITCH RIPRAP OUTLET PROTECTION SUMMARY

OUTFALL NO.	10-YR Flow Depth (D_o)	10-YR VELOCITY	TAILWATER CONDITION	APRON			TOTAL APRON				STONE		
				APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_o$)	DOWN-STREAM WIDTH (W)	APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_o$)	DOWN-STREAM WIDTH (W)	AREA OF APRON	STONE DIAMETER (d_{50})	THICKNESS OF STONE (T)	APPROX. STONE QUANTITY
	IN	FT/S		FT	FT	FT	FT	FT	FT	SF	FT	FT	CY
SCC-06	14	10.6	MIN	23.0	3.5	26.5	23.0	3.5	26.5	344	0.2	0.5	6

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CE-504 EROSION AND SEDIMENT CONTROL DETAILS November 05, 2025 04:24:26pm
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COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
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PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT 113706001
DATE 11/14/2025
SCALE AS SHOWN
DESIGNED BY STM
DRAWN BY STM
CHECKED BY JMM

EROSION AND SEDIMENT CONTROL DETAILS

PROJECT HERCULES
APPOMATTOX COUNTY VA

SHEET NUMBER
CE-504

Appendix F – Outlet Protection Table

Kimley»Horn

Project Information

Project Name: Project Hercules
KHA Project #: 113706001
Designed by: STM Date: 10/23/2025
Revised by: Date:
Revised by: Date:

BASIN RIPRAP OUTLET PROTECTION SUMMARY

				APRON (PER BARREL)			BARREL		TOTAL APRON				STONE		
OUTFALL NO.	OUTLET PIPE DIAMETER (D_o)	25-YR PEAK DISCHARGE (24 HRS)	TAILWATER CONDITION	APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_O$)	DOWN-STREAM WIDTH (W)	NUMBER OF BARRELS	BARREL SPACING	APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_O$)	DOWN-STREAM WIDTH (W)	AREA OF APRON	STONE DIAMETER (d_{50})	THICKNESS OF STONE (T)	APPROX. STONE QUANTITY
	IN	CFS		FT	FT	FT	EA	FT	FT	FT	FT	SF	FT	FT	CY
PO-01	30	54.3	MIN	24.0	7.5	26.5	1		24.0	7.5	26.5	408	1.0	2.0	30
PO-02	24	22.4	MIN	14.0	6.0	16.0	1		14.0	6.0	16.0	154	0.5	1.0	6
S111	30	54.9	MIN	24.0	7.5	26.5	1		24.0	7.5	26.5	408	1.0	2.0	30

Kimley»Horn

Project Information

Project Name: Project Hercules
KHA Project #: 113706001
Designed by: STM Date: 10/23/2025
Revised by: Date:
Revised by: Date:

CULVERT RIPRAP OUTLET PROTECTION SUMMARY

				APRON (PER BARREL)			BARREL		TOTAL APRON				STONE		
OUTFALL NO.	OUTLET PIPE DIAMETER (D_o)	10-YR PEAK DISCHARGE	TAILWATER CONDITION	APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_O$)	DOWN-STREAM WIDTH (W)	NUMBER OF BARRELS	BARREL SPACING	APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_O$)	DOWN-STREAM WIDTH (W)	AREA OF APRON	STONE DIAMETER (d_{50})	THICKNESS OF STONE (T)	APPROX. STONE QUANTITY
	IN	CFS		FT	FT	FT	EA	FT	FT	FT	FT	SF	FT	FT	CY
CU-102	24	13.0	MIN	11.0	6.0	13.0	1		11.0	6.0	13.0	105	0.5	1.0	4
CU-202	24	8.6	MIN	9.0	6.0	11.0	1		9.0	6.0	11.0	77	0.5	1.0	3

Kimley»Horn

Project Information

Project Name: Project Hercules
KHA Project #: 113706001
Designed by: STM Date: 10/23/2025
Revised by: Date:
Revised by: Date:

DITCH RIPRAP OUTLET PROTECTION SUMMARY

				APRON			TOTAL APRON				STONE		
OUTFALL NO.	10-YR Flow Depth (D_o)	10-YR VELOCITY	TAILWATER CONDITION	APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_O$)	DOWN-STREAM WIDTH (W)	APRON LENGTH (L_a)	UPSTREAM WIDTH ($3D_O$)	DOWN-STREAM WIDTH (W)	AREA OF APRON	STONE DIAMETER (d_{50})	THICKNESS OF STONE (T)	APPROX. STONE QUANTITY
	IN	FT/S		FT	FT	FT	FT	FT	FT	SF	FT	FT	CY
SCC-06	14	10.6	MIN	23.0	3.5	26.5	23.0	3.5	26.5	344	0.2	0.5	6

Appendix G – Pre-Development Drainage Area Maps and Calculations

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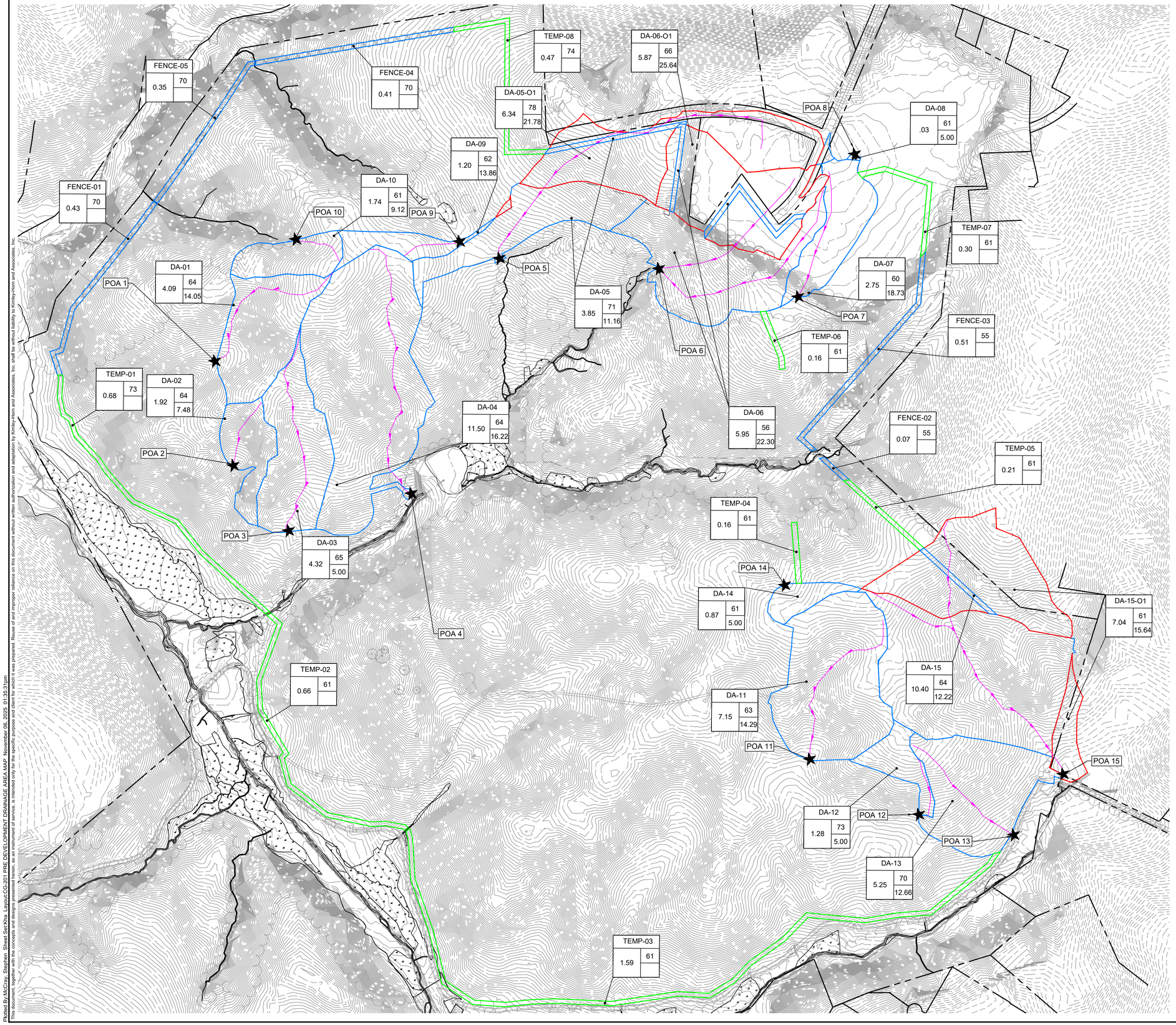
Project: AVAIO - APPOMATTOX
Project #: 113706001
Date: 11/6/2025
Locality: APPOMATTOX COUNTY

PRE-DEVELOPED DRAINAGE AREA SUMMARY										
DRAINAGE AREA LABEL	**TOTAL DRAINAGE AREA (AC.)**	**OVERALL CN**	***Land Cover:***	**IMPERV.**	**PASTURE (B)**	**PASTURE (C)**	**PASTURE (D)**	**FOREST/ OPEN SPACE (B)**	**FOREST/ OPEN SPACE (C)**	**FOREST/ OPEN SPACE (D)**
			CN:	**98**	**61**	**74**	**80**	**55**	**70**	**77**
DA-01	4.09	64		0.00	3.17	0.89	0.00	0.03	0.00	0.00
DA-02	1.93	64		0.00	1.55	0.38	0.00	0.00	0.00	0.00
DA-03	4.32	65		0.00	3.20	1.11	0.00	0.00	0.00	0.00
DA-04	11.50	64		0.00	8.00	2.77	0.00	0.74	0.00	0.00
DA-05	3.85	71		0.02	0.98	2.85	0.00	0.00	0.00	0.00
DA-05-O1	6.34	78		1.51	0.73	4.10	0.00	0.00	0.00	0.00
DA-06	5.95	56		0.02	0.99	0.00	0.00	4.94	0.00	0.00
DA-06-O1	5.87	66		0.58	3.73	0.86	0.00	0.70	0.00	0.00
DA-07	2.75	60		0.00	2.46	0.00	0.00	0.28	0.00	0.00
DA-08	0.03	61		0.00	0.03	0.00	0.00	0.00	0.00	0.00
DA-09	1.20	62		0.00	0.90	0.18	0.00	0.11	0.00	0.00
DA-10	1.74	61		0.00	0.87	0.00	0.00	0.49	0.38	0.00
DA-11	7.15	63		0.12	6.28	0.75	0.00	0.00	0.00	0.00
DA-12	1.28	73		0.02	0.15	1.10	0.00	0.00	0.00	0.00
DA-13	5.25	70		0.17	1.85	2.96	0.25	0.00	0.00	0.02
DA-14	0.87	61		0.00	0.87	0.00	0.00	0.00	0.00	0.00
DA-14-O1	0.17	61		0.00	0.17	0.00	0.00	0.00	0.00	0.00
DA-15	10.40	64		0.00	7.97	1.96	0.46	0.00	0.00	0.02
DA-15-O1	7.04	61		0.00	4.66	0.00	0.00	1.73	0.00	0.65
FENCE-01	0.43	70		0.00	0.00	0.00	0.00	0.00	0.43	0.00
FENCE-02	0.07	55		0.00	0.00	0.00	0.00	0.07	0.00	0.00
FENCE-03	0.51	55		0.00	0.00	0.00	0.00	0.51	0.00	0.00
FENCE-04	0.41	70		0.00	0.00	0.00	0.00	0.00	0.41	0.00
FENCE-05	0.35	70		0.00	0.00	0.00	0.00	0.00	0.35	0.00
TEMP-01	0.68	73		0.00	0.04	0.64	0.00	TEMPORARY WORKSPACES ARE TO BE RESTORED PER THE RESTORATION SEQUENCE ON SHEET CE-501		
TEMP-02	0.66	61		0.00	0.66	0.00	0.00			
TEMP-03	1.59	61		0.00	1.59	0.00	0.00			
TEMP-04	0.16	61		0.00	0.16	0.00	0.00			
TEMP-05	0.21	61		0.00	0.21	0.00	0.00			
TEMP-06	0.16	61		0.00	0.16	0.00	0.00			
TEMP-07	0.30	61		0.00	0.30	0.00	0.00			
TEMP-08	0.47	74		0.00	0.00	0.47	0.00			



DRAINAGE AREA MAP LEGEND

- ONSITE DRAINAGE AREA BOUNDARY
- OFFSITE DRAINAGE AREA BOUNDARY
- TEMPORARY WORKSPACE
- TIME OF CONCENTRATION
- LIMITS OF DISTURBANCE

A	
B	C
	D

DRAINAGE AREA LABEL
A - DRAINAGE AREA NAME
B - AREA (AC)
C - RUNOFF COEFFICIENT
D - TIME OF CONCENTRATION (MIN.)

ANALYZED POA

RUNOFF HAS BEEN REROUTED TO ANOTHER POA

NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

Jacobs

Kimley»Horn

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COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402057995
PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PRE DEVELOPMENT DRAINAGE AREA MAP

PROJECT HERCULES

VA

APPOMATTOX COUNTY

SHEET NUMBER
CG-201

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CG-201 PRE DEVELOPMENT DRAINAGE AREA MAP November 06, 2025 01:35:31pm
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Plotted By:McCray, Stephen Sheet Set:Kha Layout:CG-203 PRE DEVELOPMENT LAND COVER November 06, 2025 01:39:44pm

PRE-DEV DRAINAGE AREA MAP LEGEND

- FORESTED AREA - B SOILS
- FORESTED AREA - C SOILS
- FORESTED AREA - D SOILS
- PASTURE AREA - B SOILS
- PASTURE AREA - C SOILS
- PASTURE AREA - D SOILS
- IMPERVIOUS AREA
- BRUSH AREA - B SOILS
- BRUSH AREA - C SOILS
- BRUSH AREA - D SOILS
- SOIL TYPE BOUNDARY
- ONSITE DRAINAGE AREA BOUNDARY
- OFFSITE DRAINAGE AREA BOUNDARY
- TEMPORARY WORKSPACE
- LAND DISTURBANCE BOUNDARY

NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

Jacobs

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COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402057995
PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	STM
DRAWN BY	STM
CHECKED BY	JMM

PRE DEVELOPMENT LAND COVER

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CG-203

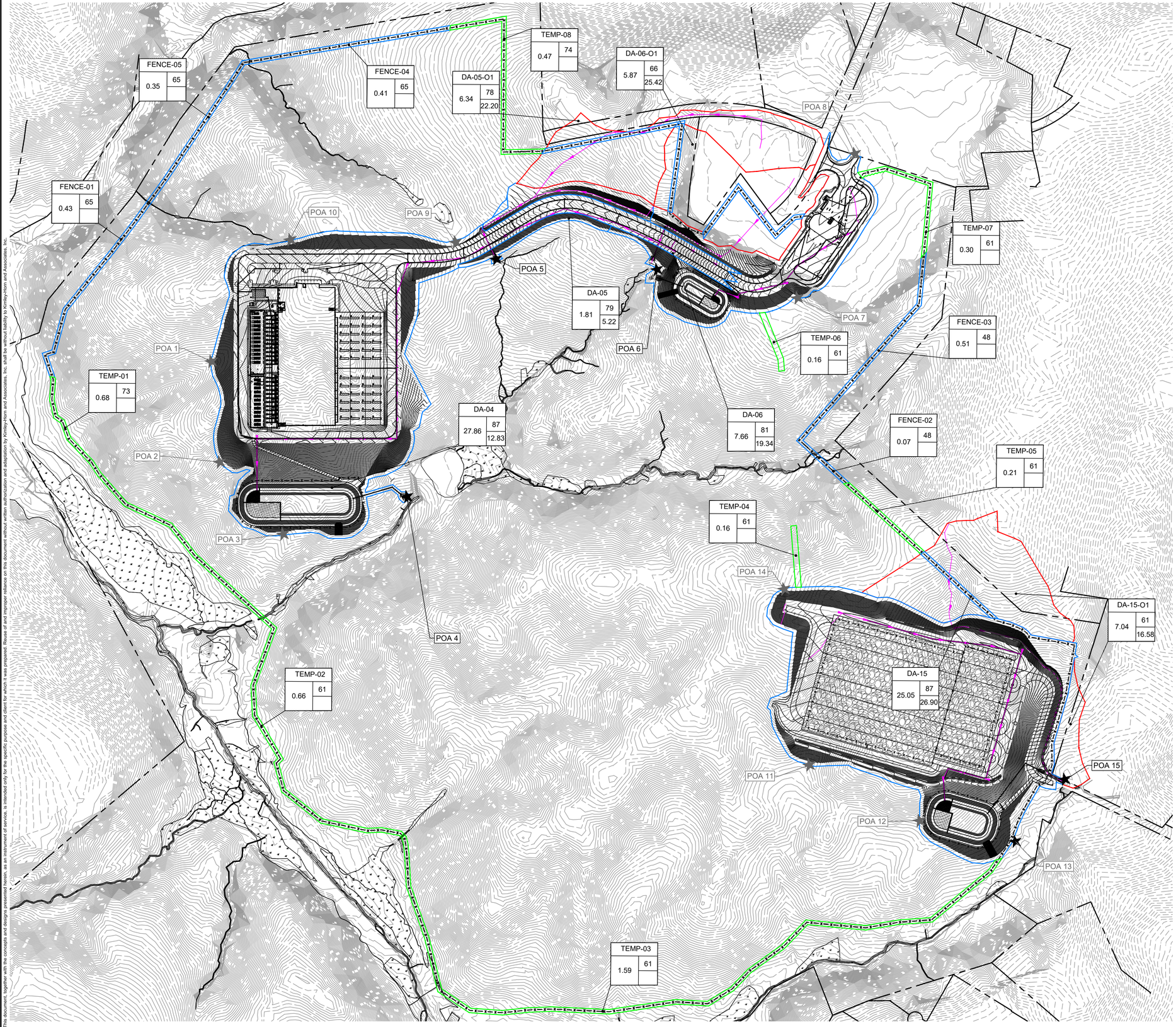
Appendix H – Post-Development Drainage Area Maps and Calculation

Kimley»Horn

Project: AVAIO - APPOMATTOX
Project #: 113706001
Date: 11/6/2025
Locality: APPOMATTOX COUNTY

POST-DEVELOPED DRAINAGE AREA SUMMARY

DRAINAGE AREA LABEL	TOTAL DRAINAGE AREA (AC.)	OVERALL CN	*Land Cover:*	IMPERV.	MANAGED TURF (B)	MANAGED TURF (C)	MANAGED TURF (D)	FOREST/ OPEN SPACE (B)	FOREST/ OPEN SPACE (C)	FOREST/ OPEN SPACE (D)	BRUSH (B)	BRUSH (C)	BRUSH (D)
			CN:	98	61	74	80	55	70	77	48	65	73
DA-04	27.86	87		14.31		11.71	1.85						
DA-05	1.81	79		0.01		0.288	1.51						
DA-05-O1	6.34	78		1.51	0.73	4.10	0.00						
DA-06	7.66	81		2.10		5.56	0.00						
DA-06-O1	5.87	66		0.58	3.73	0.86	0.00	0.70					
DA-15	25.05	87		12.28		9.60	3.17						
DA-15-O1	7.04	61		0.00	4.66	0.00	0.00	1.73		0.65			
FENCE-01	0.43	65		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00
FENCE-02	0.07	48		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00
FENCE-03	0.51	48		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00
FENCE-04	0.41	65		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00
FENCE-05	0.35	65		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00
TEMP-01	0.68	73		0.00	0.04	0.64	0.00	TEMPORARY WORKSPACES ARE TO BE RESTORED PER THE RESTORATION SEQUENCE ON SHEET CE-501					
TEMP-02	0.66	61		0.00	0.66	0.00	0.00						
TEMP-03	1.59	61		0.00	1.59	0.00	0.00						
TEMP-04	0.16	61		0.00	0.16	0.00	0.00						
TEMP-05	0.21	61		0.00	0.21	0.00	0.00						
TEMP-06	0.16	61		0.00	0.16	0.00	0.00						
TEMP-07	0.30	61		0.00	0.30	0.00	0.00						
TEMP-08	0.47	74		0.00	0.00	0.47	0.00						



DRAINAGE AREA MAP LEGEND

- ONSITE DRAINAGE AREA BOUNDARY
- OFFSITE DRAINAGE AREA BOUNDARY
- TEMPORARY WORKSPACE
- TIME OF CONCENTRATION
- LIMITS OF DISTURBANCE

A	
B	C
	D

DRAINAGE AREA LABEL
A - DRAINAGE AREA NAME
B - AREA (AC)
C - RUNOFF COEFFICIENT
D - TIME OF CONCENTRATION (MIN.)

ANALYZED POA

RUNOFF HAS BEEN REROUTED TO ANOTHER POA

NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

Jacobs

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COMMONWEALTH OF VIRGINIA
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PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT 113706001
DATE 11/14/2025
SCALE AS SHOWN
DESIGNED BY STM
DRAWN BY STM
CHECKED BY JMM

POST DEVELOPMENT DRAINAGE AREA MAP

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CG-202

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CG-202 POST DEVELOPMENT DRAINAGE AREA MAP November 06, 2025 01:37:07pm
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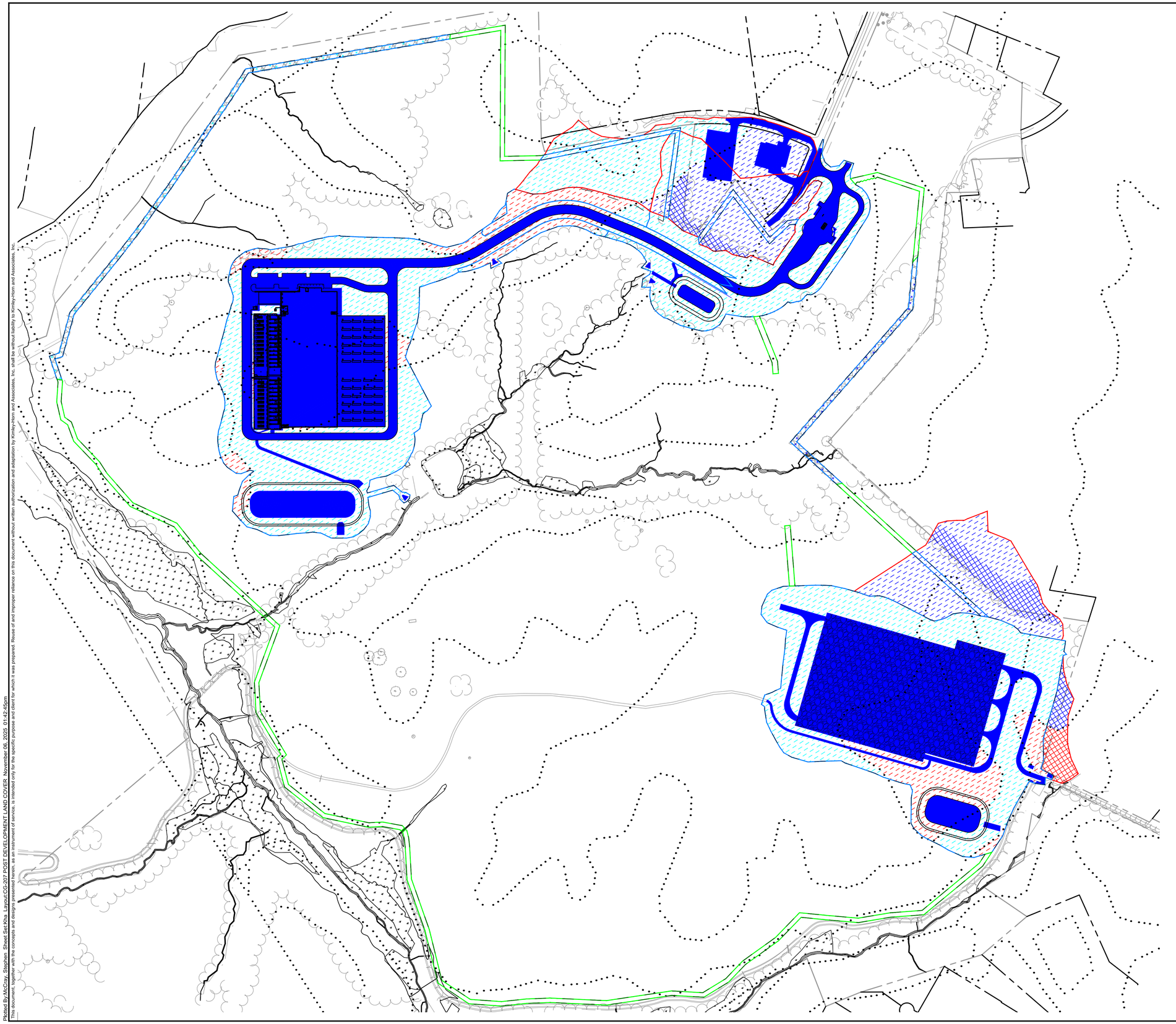

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11/14/2025

KHA PROJECT 113706001
DATE 11/14/2025
SCALE AS SHOWN
DESIGNED BY STM
DRAWN BY STM
CHECKED BY JMM

POST DEVELOPMENT LAND COVER

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CG-204

Appendix I – Time of Concentration Calculations

Kimley»Horn

Project: AVAIO APPOMATTOX
Project #: 113706001
Date: 10/23/2025
Locality: APPOMATTOX VA

*Note: n factor assumptions as follows:	
Bare Earth	0.20
Woods-light underbrush	0.40
Impervious	0.01
Grass-dense/native	0.24

TIME OF CONCENTRATION CALCULATIONS-PRE DEVELOPMENT

DRAINAGE AREA	TIME OF CONC. T_c (min)	OVERLAND FLOW TIME (TR-55) $T_{oft} = 0.007*60*(nL)^{0.8}/P^{0.5}S^{0.4}$					SHALLOW CONCENTRATED FLOW TIME (TR-55) $V = 16.1345S^{0.5}$ (UNPAVED), $V = 20.3282S^{0.5}$ (PAVED)					CHANNEL FLOW TIME (KIRPICH) $T_{chf} = 0.007L^{0.77}(H/L)^{-0.385}$		
		L (ft)	n	S (ft/ft)	P_2	T_t (min)	PAVED / UNPAVED	S (ft/ft)	V (ft/s)	L (ft)	T_{scf} (min)	H (ft)	L (ft)	T_{chf} (min)
DA-01	14.05	100	0.24	0.034	3.40	11.20	U	0.052	3.68	100	0.45	49.7	576	2.40
DA-02	7.48	40	0.24	0.033	3.40	5.44	U	0.158	6.41	100	0.26	35.4	397	1.78
DA-03	5.00				3.40	0.00	U	0.081	4.59	100	0.36	58.2	899	3.78
DA-04	16.22	100	0.24	0.032	3.40	11.47	U	0.046	3.46	100	0.48	69.3	1058	4.26
DA-05	11.16	100	0.24	0.050	3.40	9.60	U	0.050	3.61	100	0.46	13.0	188	1.10
DA-05-O1	21.78	100	0.24	0.015	3.40	15.53	U	0.110	5.35	28	0.09	72.7	1478	6.16
DA-06	22.30	100	0.24	0.011	3.40	17.58	U	0.007	1.35	100	1.23	58.3	839	3.49
DA-06-O1	25.64	100	0.24	0.007	3.40	21.07	U	0.006	1.25	100	1.33	46.5	730	3.24
DA-07	18.73	100	0.24	0.015	3.40	15.53	U	0.009	1.53	100	1.09	22.9	397	2.10
DA-08	5.00				3.40	0.00			0.00		0.00			0.00
DA-09	13.86	100	0.24	0.024	3.40	12.87	U	0.081	4.59	100	0.36	2.3	65	0.63
DA-10	9.12	76	0.24	0.041	3.40	8.34	U	0.083	4.65	100	0.36	9.4	73	0.42
DA-11	14.29	100	0.24	0.037	3.40	10.82	U	0.054	3.75	100	0.44	33.0	613	3.02
DA-12	5.00				3.40	0.00	U	0.070	4.27	100	0.39	16.3	198	1.07
DA-13	12.66	100	0.24	0.041	3.40	10.39	U	0.062	4.02	100	0.41	36.0	415	1.86
DA-14	5.00				3.40	0.00			0.00		0.00			0.00
DA-15	12.22	100	0.24	0.036	3.40	10.94	U	0.067	4.18	100	0.40	47.0	236	0.88
DA-15-O1	15.64	100	0.24	0.040	3.40	10.49	U	0.080	4.56	100	0.37	50.0	1048	4.78

Kimley»Horn

Project: AVAIO APPOMATTOX
Project #: 113706001
Date: 10/23/2025
Locality: APPOMATTOX VA

*Note: n factor assumptions as follows:	
Bare Earth	0.20
Woods-light underbrush	0.40
Impervious	0.01
Grass-dense/native	0.24

TIME OF CONCENTRATION CALCULATIONS-POST DEVELOPMENT

DRAINAGE AREA	TIME OF CONC. T_c (min)	OVERLAND FLOW TIME (TR-55) $T_{oft} = 0.007*60*(nL)^{0.8}/P^{0.5}S^{0.4}$					SHALLOW CONCENTRATED FLOW TIME (TR-55) $V = 16.1345S^{0.5}$ (UNPAVED), $V = 20.3282S^{0.5}$ (PAVED)					CHANNEL FLOW TIME (KIRPICH) Tchf =0.007L0.77(H/L)-0.385		
		L (ft)	n	S (ft/ft)	P_2	T_t (min)	PAVED / UNPAVED	S (ft/ft)	V (ft/s)	L (ft)	T_{scf} (min)	H (ft)	L (ft)	T_{chf} (min)
DA-04	12.83				3.40	0.00	P	0.059	4.92	60	0.20	115.0	3208	12.63
DA-05	5.22				3.40	0.00	U	0.110	5.35	53	0.17	32.0	948	5.06
DA-05-O1	22.20	100	0.24	0.015	3.40	15.53	U	0.110	5.35	28	0.09	72.7	1565	6.58
DA-06	19.34	100	0.24	0.016	3.40	15.02	P	0.028	3.40	65	0.32	33.0	782	4.00
DA-06-O1	25.42	100	0.24	0.007	3.40	21.07	U	0.006	1.25	100	1.33	56.0	730	3.01
DA-15	26.90	100	0.24	0.018	3.40	14.44	U	0.015	1.98	100	0.84	24.0	1770	11.62
DA-15-O1	16.58	100	0.24	0.040	3.40	10.49	U	0.080	4.56	100	0.37	50.0	1225	5.73

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Project: AVAIO APPOMATTOX
Project #: 113706001
Date: 10/23/2025
Locality: APPOMATTOX VA

*Note: n factor assumptions as follows:	
Bare Earth	0.20
Woods-light underbrush	0.40
Impervious	0.01
Grass-dense/native	0.24

TIME OF CONCENTRATION CALCULATIONS-PHASE I E&S BASINS AND TRAPS

DRAINAGE AREA	TIME OF CONC. T_c (min)	OVERLAND FLOW TIME (TR-55) $T_{oft} = 0.007*60*(nL)^{0.8}/P^{0.5}S^{0.4}$					SHALLOW CONCENTRATED FLOW TIME (TR-55) $V = 16.1345S^{0.5}$ (UNPAVED), $V = 20.3282S^{0.5}$ (PAVED)					CHANNEL FLOW TIME (KIRPICH Tchf =0.007L0.77(H/L)-0.385		
		L (ft)	n	S (ft/ft)	P_2	T_t (min)	PAVED / UNPAVED	S (ft/ft)	V (ft/s)	L (ft)	T_{scf} (min)	H (ft)	L (ft)	T_{chf} (min)
ST-01	11.29	100	0.20	0.043	3.40	8.81	U	0.051	3.64	100	0.46	42.0	470	2.02
ST-02	9.30	100	0.20	0.048	3.40	8.43	U	0.080	4.56	100	0.37	23.7	118	0.51
ST-03	5.00				3.40	0.00			0.00		0.00	21.0	427	2.37
ST-04	5.00				3.40	0.00								
SB-A	15.47	100	0.20	0.027	3.40	10.61	U	0.069	4.24	100	0.39	50.0	987	4.46
SB-B	15.35	100	0.20	0.022	3.40	11.52	U	0.007	1.35	100	1.23	32.0	532	2.59
SB-C	16.76	100	0.24	0.040	3.40	10.49	U	0.080	4.56	100	0.37	36.4	1131	5.90

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Project: AVAIO APPOMATTOX
Project #: 113706001
Date: 10/23/2025
Locality: APPOMATTOX VA

*Note: n factor assumptions as follows:	
Bare Earth	0.20
Woods-light underbrush	0.40
Impervious	0.01
Grass-dense/native	0.24

TIME OF CONCENTRATION CALCULATIONS-PHASE I E&S DITCHES

DRAINAGE AREA	TIME OF CONC. T_c (min)	OVERLAND FLOW TIME (TR-55) $T_{oft} = 0.007*60*(nL)^{0.8}/P^{0.5}S^{0.4}$					SHALLOW CONCENTRATED FLOW TIME (TR-55) $V = 16.1345S^{0.5}$ (UNPAVED), $V = 20.3282S^{0.5}$ (PAVED)					CHANNEL FLOW TIME (KIRPICH) Tchf =0.007L0.77(H/L)-0.385		
		L (ft)	n	S (ft/ft)	P_2	T_t (min)	PAVED / UNPAVED	S (ft/ft)	V (ft/s)	L (ft)	T_{scf} (min)	H (ft)	L (ft)	T_{chf} (min)
DIV-1	20.87	100	0.24	0.015	3.40	15.53	U	0.110	5.35	28	0.09	52.0	1152	5.25
DIV-2	13.93	100	0.20	0.027	3.40	10.61	U	0.069	4.24	100	0.39	43.0	651	2.92
DIV-3	14.00	100	0.24	0.040	3.40	10.49	U	0.080	4.56	100	0.37	35.0	647	3.14

Kimley»Horn

Project: AVAIO APPOMATTOX
Project #: 113706001
Date: 10/23/2025
Locality: APPOMATTOX VA

*Note: n factor assumptions as follows:	
Bare Earth	0.20
Woods-light underbrush	0.40
Impervious	0.01
Grass-dense/native	0.24

TIME OF CONCENTRATION CALCULATIONS-PHASE II E&S DITCHES

DRAINAGE AREA	TIME OF CONC. T_c (min)	OVERLAND FLOW TIME (TR-55) $T_{oft} = 0.007*60*(nL)^{0.8}/P^{0.5}S^{0.4}$					SHALLOW CONCENTRATED FLOW TIME (TR-55) $V = 16.1345S^{0.5}$ (UNPAVED), $V = 20.3282S^{0.5}$ (PAVED)					CHANNEL FLOW TIME (KIRPICH) Tchf =0.007L0.77(H/L)-0.385		
		L (ft)	n	S (ft/ft)	P_2	T_t (min)	PAVED / UNPAVED	S (ft/ft)	V (ft/s)	L (ft)	T_{scf} (min)	H (ft)	L (ft)	T_{chf} (min)
SCC-01	20.81	100	0.24	0.015	3.40	15.53	U	0.110	5.35	28	0.09	52.7	1146	5.19
SCC-02	23.79	100	0.24	0.007	3.40	21.07	U	0.006	1.25	100	1.33	23.6	279	1.38
SCC-03	17.72	100	0.40	0.040	3.40	15.79	U	0.080	4.55	100	0.37	18.5	287	1.57
SCC-04	5.00	100	0.01	0.015	3.40	1.22	P	0.015	2.49	100	0.67	2.6	162	1.73
SCC-05	5.00	100	0.01	0.015	3.40	1.22	P	0.015	2.49	100	0.67	1.7	120	1.44
SCC-06	5.00				3.40	0.00			0.00		0.00	4.2	94	0.77

Kimley»Horn

Project: AVAIO APPOMATTOX
Project #: 113706001
Date: 10/23/2025
Locality: APPOMATTOX VA

*Note: n factor assumptions as follows:	
Bare Earth	0.20
Woods-light underbrush	0.40
Impervious	0.01
Grass-dense/native	0.24

TIME OF CONCENTRATION CALCULATIONS-POST DEVELOPMENT DITCHES AND CULVERTS

DRAINAGE AREA	TIME OF CONC. T_c (min)	OVERLAND FLOW TIME (TR-55) $T_{oft} = 0.007*60*(nL)^{0.8}/P^{0.5}S^{0.4}$					SHALLOW CONCENTRATED FLOW TIME (TR-55) $V = 16.1345S^{0.5}$ (UNPAVED), $V = 20.3282S^{0.5}$ (PAVED)					CHANNEL FLOW TIME (KIRPICH) Tchf =0.007L0.77(H/L)-0.385		
		L (ft)	n	S (ft/ft)	P_2	T_t (min)	PAVED / UNPAVED	S (ft/ft)	V (ft/s)	L (ft)	T_{scf} (min)	H (ft)	L (ft)	T_{chf} (min)
SCC-01	20.81	100	0.24	0.015	3.40	15.53	U	0.110	5.35	28	0.09	52.7	1146	5.19
SCC-02	23.79	100	0.24	0.007	3.40	21.07	U	0.006	1.25	100	1.33	23.6	279	1.38
SCC-03	17.72	100	0.40	0.040	3.40	15.79	U	0.080	4.55	100	0.37	18.5	287	1.57
SCC-04	5.00	100	0.01	0.015	3.40	1.22	P	0.015	2.49	100	0.67	2.6	162	1.73
SCC-05	5.00	100	0.01	0.015	3.40	1.22	P	0.015	2.49	100	0.67	1.7	120	1.44
SCC-06	5.00				3.40	0.00			0.00		0.00	4.2	94	0.77
CU100	21.60	100	0.24	0.015	3.40	15.53	U	0.110	5.35	28	0.09	67.3	1405	5.98
CU200	24.85	100	0.24	0.007	3.40	21.07	U	0.006	1.25	100	1.33	43.6	561	2.45

Kimley»Horn

Project: AVAIO APPOMATTOX
Project #: 113706001
Date: 10/23/2025
Locality: APPOMATTOX VA

*Note: n factor assumptions as follows:	
Cultivated Soils w/residue cover	0.17
Woods-light underbrush	0.40
impervious	0.01
Grass-dense/native	0.24

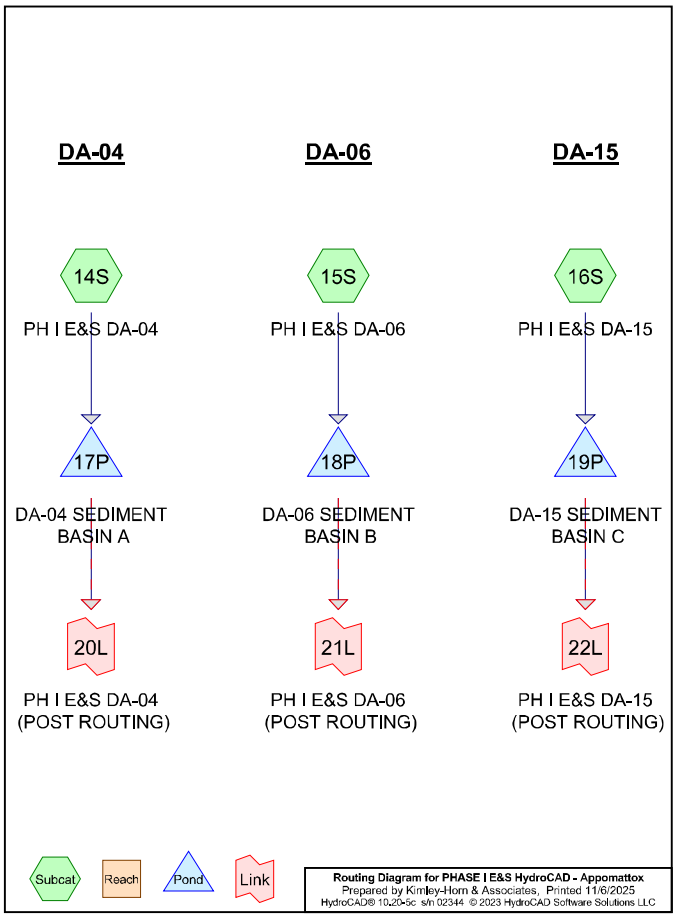
TIME OF CONCENTRATION CALCULATIONS-POST DEVELOPMENT AND PHASE II E&S DOWNSTREAM CROSS SECTIONS

DRAINAGE AREA	TIME OF CONC. T_c (min)	OVERLAND FLOW TIME (TR-55) $T_{oft} = 0.007*60*(nL)^{0.8}/P^{0.5}S^{0.4}$					SHALLOW CONCENTRATED FLOW TIME (TR-55) V = 16.1345$S^{0.5}$ (UNPAVED), V = 20.3282$S^{0.5}$ (PAVED)					CHANNEL FLOW TIME (KIRPICH) Tchf =0.007L0.77(H/L)-0.385		
		L (ft)	n	S (ft/ft)	P_2	T_t (min)	PAVED / UNPAVED	S (ft/ft)	V (ft/s)	L (ft)	T_{scf} (min)	H (ft)	L (ft)	T_{chf} (min)
CS-DA-04	32.13	100	0.24	0.018	3.40	14.39	U	0.015	1.98	100	0.84	161.5	4621	16.90
CS-DA-05	30.43	100	0.24	0.007	3.40	21.49	U	0.013	1.81	100	0.92	108.1	2119	8.01
CS-DA-06	20.43	100	0.24	0.022	3.40	13.23	U	0.007	1.37	100	1.21	115.8	1683	5.98
CS-DA-15	28.56	100	0.40	0.018	3.40	21.72	U	0.015	1.99	100	0.84	83.3	1513	6.00

TIME OF CONCENTRATION CALCULATIONS-PRE DEVELOPMENT DOWNSTREAM CROSS SECTIONS

DRAINAGE AREA	TIME OF CONC. T_c (min)	OVERLAND FLOW TIME (TR-55) $T_{oft} = 0.007*60*(nL)^{0.8}/P^{0.5}S^{0.4}$					SHALLOW CONCENTRATED FLOW TIME (TR-55) V = 16.1345$S^{0.5}$ (UNPAVED), V = 20.3282$S^{0.5}$ (PAVED)					CHANNEL FLOW TIME (KIRPICH) Tchf =0.007L0.77(H/L)-0.385		
		L (ft)	n	S (ft/ft)	P_2	T_t (min)	PAVED / UNPAVED	S (ft/ft)	V (ft/s)	L (ft)	T_{scf} (min)	H (ft)	L (ft)	T_{chf} (min)
CS-DA-04	31.55	100	0.24	0.022	3.40	13.38	U	0.017	2.10	100	0.79	163.8	4758	17.38
CS-DA-05	17.40	100	0.24	0.059	3.40	9.01	U	0.073	4.36	100	0.38	108.1	2119	8.01
CS-DA-06	7.62	100	0.01	0.022	3.40	1.04	U	0.007	1.37	100	1.21	115.8	1532	5.36
CS-DA-15	29.84	100	0.24	0.032	3.40	11.47	U	0.053	3.71	102	0.46	134.6	4574	17.91

Appendix J – HydroCAD Hydrograph Summaries



Summary for Subcatchment 14S: PH I E&S DA-04

[48] Hint: Peak<CiA due to short duration

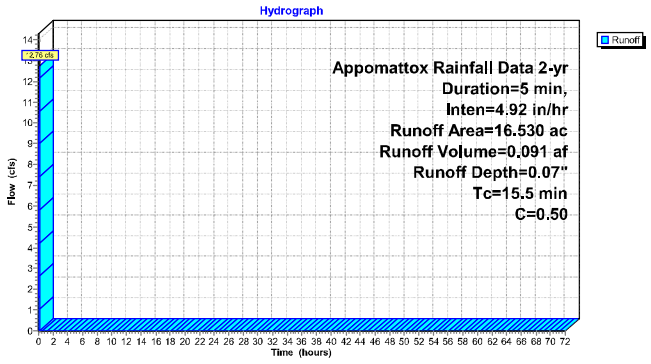
Runoff = 12.76 cfs @ 0.08 hrs, Volume= 0.091 af, Depth= 0.07"
Routed to Pond 17P : DA-04 SEDIMENT BASIN A

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 2-yr Duration=5 min, Inten=4.92 in/hr

Area (ac)	C	Description
16.530	0.50	
16.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5					Direct Entry,

Subcatchment 14S: PH I E&S DA-04



Summary for Subcatchment 15S: PH I E&S DA-06

[48] Hint: Peak<CiA due to short duration

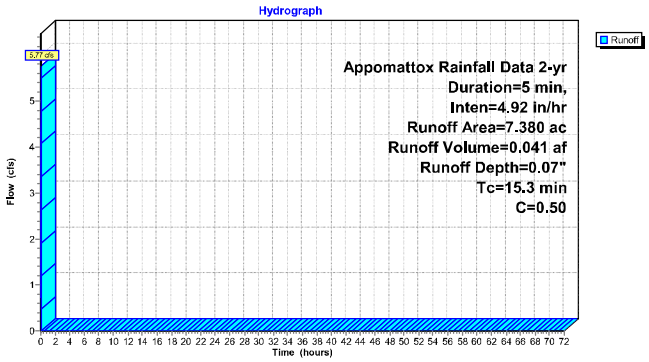
Runoff = 5.77 cfs @ 0.08 hrs, Volume= 0.041 af, Depth= 0.07"
Routed to Pond 18P : DA-06 SEDIMENT BASIN B

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 2-yr Duration=5 min, Inten=4.92 in/hr

Area (ac)	C	Description
7.380	0.50	
7.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3					Direct Entry,

Subcatchment 15S: PH I E&S DA-06



Summary for Subcatchment 16S: PH I E&S DA-15

[48] Hint: Peak<CiA due to short duration

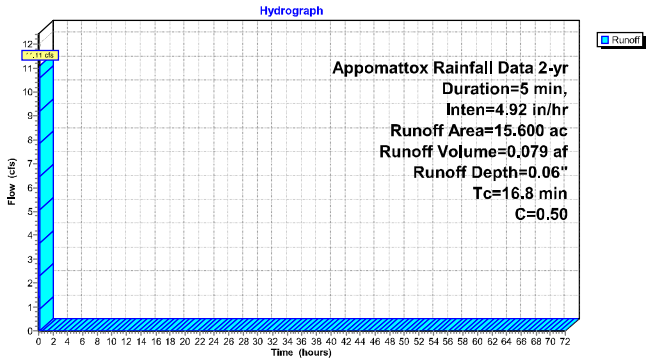
Runoff = 11.11 cfs @ 0.08 hrs, Volume= 0.079 af, Depth= 0.06"
Routed to Pond 19P : DA-15 SEDIMENT BASIN C

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 2-yr Duration=5 min, Inten=4.92 in/hr

Area (ac)	C	Description
15.600	0.50	
15.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8					Direct Entry,

Subcatchment 16S: PH I E&S DA-15



Summary for Pond 17P: DA-04 SEDIMENT BASIN A

Inflow Area = 16.530 ac, 0.00% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 12.76 cfs @ 0.08 hrs, Volume= 0.091 af
Outflow = 0.01 cfs @ 0.17 hrs, Volume= 0.041 af, Atten= 100%, Lag= 5.2 min
Primary = 0.01 cfs @ 0.17 hrs, Volume= 0.041 af
Routed to Link 20L : PH I E&S DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 20L : PH I E&S DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 711.07' @ 0.17 hrs Surf.Area= 56,235 sf Storage= 149,282 cf (3,959 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,940.4 min (1,945.4 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

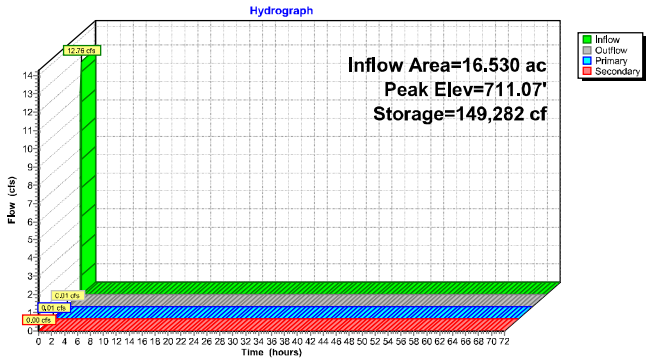
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.01 cfs @ 0.17 hrs HW=711.07' (Free Discharge)
└**1=CULVERT** (Passes 0.01 cfs of 34.83 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.01 cfs @ 0.87 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 17P: DA-04 SEDIMENT BASIN A



Stage-Discharge for Pond 17P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00	712.20	0.23	0.23	0.00
707.10	0.00	0.00	0.00	712.30	0.24	0.24	0.00
707.20	0.00	0.00	0.00	712.40	0.25	0.25	0.00
707.30	0.00	0.00	0.00	712.50	0.26	0.26	0.00
707.40	0.00	0.00	0.00	712.60	0.27	0.27	0.00
707.50	0.00	0.00	0.00	712.70	0.28	0.28	0.00
707.60	0.00	0.00	0.00	712.80	0.29	0.29	0.00
707.70	0.00	0.00	0.00	712.90	0.29	0.29	0.00
707.80	0.00	0.00	0.00	713.00	0.30	0.30	0.00
707.90	0.00	0.00	0.00	713.10	0.31	0.31	0.00
708.00	0.00	0.00	0.00	713.20	0.32	0.32	0.00
708.10	0.00	0.00	0.00	713.30	0.33	0.33	0.00
708.20	0.00	0.00	0.00	713.40	0.33	0.33	0.00
708.30	0.00	0.00	0.00	713.50	0.34	0.34	0.00
708.40	0.00	0.00	0.00	713.60	1.97	1.97	0.00
708.50	0.00	0.00	0.00	713.70	4.95	4.95	0.00
708.60	0.00	0.00	0.00	713.80	8.80	8.80	0.00
708.70	0.00	0.00	0.00	713.90	13.36	13.36	0.00
708.80	0.00	0.00	0.00	714.00	18.54	18.54	0.00
708.90	0.00	0.00	0.00	714.10	24.25	24.25	0.00
709.00	0.00	0.00	0.00	714.20	30.47	30.47	0.00
709.10	0.00	0.00	0.00	714.30	37.15	37.15	0.00
709.20	0.00	0.00	0.00	714.40	44.26	44.26	0.00
709.30	0.00	0.00	0.00	714.50	51.77	51.77	0.00
709.40	0.00	0.00	0.00	714.60	54.27	54.27	0.00
709.50	0.00	0.00	0.00	714.70	54.72	54.72	0.00
709.60	0.00	0.00	0.00	714.80	55.17	55.17	0.00
709.70	0.00	0.00	0.00	714.90	55.61	55.61	0.00
709.80	0.00	0.00	0.00	715.00	56.05	56.05	0.00
709.90	0.00	0.00	0.00	715.10	57.78	56.49	1.29
710.00	0.00	0.00	0.00	715.20	60.63	56.92	3.71
710.10	0.00	0.00	0.00	715.30	64.30	57.35	6.95
710.20	0.00	0.00	0.00	715.40	68.67	57.77	10.90
710.30	0.00	0.00	0.00	715.50	73.66	58.20	15.46
710.40	0.00	0.00	0.00	715.60	79.24	58.61	20.63
710.50	0.00	0.00	0.00	715.70	85.11	59.03	26.08
710.60	0.00	0.00	0.00	715.80	91.41	59.44	31.96
710.70	0.00	0.00	0.00	715.90	98.46	59.86	38.61
710.80	0.00	0.00	0.00	716.00	106.03	60.26	45.76
710.90	0.00	0.00	0.00	716.10	114.29	60.67	53.63
711.00	0.00	0.00	0.00	716.20	123.12	61.07	62.05
711.10	0.02	0.02	0.00	716.30	132.38	61.47	70.91
711.20	0.06	0.06	0.00	716.40	142.16	61.87	80.29
711.30	0.09	0.09	0.00	716.50	152.30	62.26	90.04
711.40	0.12	0.12	0.00	716.60	162.94	62.66	100.28
711.50	0.14	0.14	0.00	716.70	174.27	63.05	111.23
711.60	0.15	0.15	0.00	716.80	186.14	63.43	122.71
711.70	0.17	0.17	0.00	716.90	198.55	63.82	134.73
711.80	0.18	0.18	0.00	717.00	211.49	64.20	147.29
711.90	0.19	0.19	0.00	717.10	224.97	64.58	160.39
712.00	0.21	0.21	0.00	717.20	239.00	64.96	174.04
712.10	0.22	0.22	0.00	717.30	253.58	65.34	188.25

Stage-Discharge for Pond 17P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
717.40	268.71	65.71	203.00
717.50	284.40	66.08	218.32
717.60	300.64	66.45	234.19
717.70	317.45	66.82	250.63
717.80	334.83	67.19	267.64
717.90	352.77	67.55	285.22
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 17P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0	712.20	68,641	222,808
707.10	29,102	2,947	712.30	69,006	229,691
707.20	29,350	5,895	712.40	69,370	236,573
707.30	29,599	8,842	712.50	69,735	243,455
707.40	29,847	11,790	712.60	70,101	250,520
707.50	30,095	14,737	712.70	70,466	257,585
707.60	30,346	17,809	712.80	70,832	264,650
707.70	30,596	20,882	712.90	71,197	271,715
707.80	30,847	23,954	713.00	71,563	278,780
707.90	31,097	27,026	713.10	72,052	286,058
708.00	31,348	30,098	713.20	72,541	293,337
708.10	31,600	33,296	713.30	73,029	300,615
708.20	31,853	36,494	713.40	73,518	307,894
708.30	32,105	39,692	713.50	74,007	315,172
708.40	32,358	42,890	713.60	74,372	322,664
708.50	32,610	46,088	713.70	74,737	330,156
708.60	32,864	49,412	713.80	75,102	337,648
708.70	33,119	52,737	713.90	75,467	345,140
708.80	33,373	56,061	714.00	75,832	352,632
708.90	33,628	59,386	714.10	76,199	360,307
709.00	33,882	62,711	714.20	76,567	367,982
709.10	34,139	66,163	714.30	76,934	375,657
709.20	34,395	69,615	714.40	77,302	383,332
709.30	34,652	73,068	714.50	77,669	391,007
709.40	34,908	76,520	714.60	78,039	398,867
709.50	35,165	79,972	714.70	78,410	406,726
709.60	35,424	83,554	714.80	78,780	414,586
709.70	35,683	87,135	714.90	79,151	422,445
709.80	35,942	90,716	715.00	79,521	430,305
709.90	36,201	94,297	715.10	79,894	438,350
710.00	36,460	97,879	715.20	80,267	446,395
710.10	39,025	102,166	715.30	80,639	454,441
710.20	41,591	106,453	715.40	81,012	462,486
710.30	44,156	110,741	715.50	81,385	470,531
710.40	46,722	115,028	715.60	81,761	478,764
710.50	49,287	119,315	715.70	82,136	486,996
710.60	50,379	124,517	715.80	82,512	495,228
710.70	51,471	129,719	715.90	82,887	503,461
710.80	52,562	134,920	716.00	83,263	511,693
710.90	53,654	140,122	716.10	83,641	520,114
711.00	54,746	145,324	716.20	84,019	528,535
711.10	57,019	151,366	716.30	84,398	536,956
711.20	59,292	157,409	716.40	84,776	545,377
711.30	61,565	163,452	716.50	85,154	553,798
711.40	63,838	169,495	716.60	85,535	562,408
711.50	66,111	175,538	716.70	85,916	571,019
711.60	66,471	182,239	716.80	86,296	579,629
711.70	66,831	188,940	716.90	86,677	588,240
711.80	67,192	195,641	717.00	87,058	596,851
711.90	67,552	202,342	717.10	88,443	605,903
712.00	67,912	209,044	717.20	89,829	614,955
712.10	68,277	215,926	717.30	91,214	624,007

Stage-Area-Storage for Pond 17P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
717.40	92,600	633,059
717.50	93,985	642,111
717.60	95,403	651,864
717.70	96,821	661,617
717.80	98,239	671,370
717.90	99,657	681,123
718.00	**101,075**	**690,876**

Summary for Pond 18P: DA-06 SEDIMENT BASIN B

Inflow Area = 7.380 ac, 0.00% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 5.77 cfs @ 0.08 hrs, Volume= 0.041 af
Outflow = 0.01 cfs @ 0.17 hrs, Volume= 0.030 af, Atten= 100%, Lag= 5.2 min
Primary = 0.01 cfs @ 0.17 hrs, Volume= 0.030 af
Routed to Link 21L : PH I E&S DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 21L : PH I E&S DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 805.15' @ 0.17 hrs Surf.Area= 10,969 sf Storage= 15,592 cf (1,789 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,553.4 min (1,558.4 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

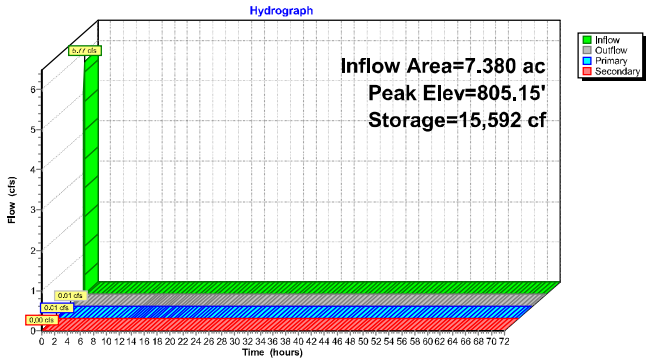
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.01 cfs @ 0.17 hrs HW=805.15' (Free Discharge)
└**1=CULVERT** (Passes 0.01 cfs of 50.65 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.01 cfs @ 1.56 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 18P: DA-06 SEDIMENT BASIN B



Stage-Discharge for Pond 18P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00	807.20	0.05	0.05	0.00
802.10	0.00	0.00	0.00	807.30	0.05	0.05	0.00
802.20	0.00	0.00	0.00	807.40	0.05	0.05	0.00
802.30	0.00	0.00	0.00	807.50	0.05	0.05	0.00
802.40	0.00	0.00	0.00	807.60	1.68	1.68	0.00
802.50	0.00	0.00	0.00	807.70	4.65	4.65	0.00
802.60	0.00	0.00	0.00	807.80	8.49	8.49	0.00
802.70	0.00	0.00	0.00	807.90	13.05	13.05	0.00
802.80	0.00	0.00	0.00	808.00	18.21	18.21	0.00
802.90	0.00	0.00	0.00	808.10	23.93	23.93	0.00
803.00	0.00	0.00	0.00	808.20	30.14	30.14	0.00
803.10	0.00	0.00	0.00	808.30	36.81	36.81	0.00
803.20	0.00	0.00	0.00	808.40	43.91	43.91	0.00
803.30	0.00	0.00	0.00	808.50	51.42	51.42	0.00
803.40	0.00	0.00	0.00	808.60	57.92	57.92	0.00
803.50	0.00	0.00	0.00	808.70	59.32	58.11	1.21
803.60	0.00	0.00	0.00	808.80	61.78	58.31	3.47
803.70	0.00	0.00	0.00	808.90	65.01	58.51	6.51
803.80	0.00	0.00	0.00	809.00	68.92	58.70	10.22
803.90	0.00	0.00	0.00	809.10	73.41	58.90	14.51
804.00	0.00	0.00	0.00	809.20	78.47	59.09	19.37
804.10	0.00	0.00	0.00	809.30	83.80	59.28	24.52
804.20	0.00	0.00	0.00	809.40	89.55	59.48	30.07
804.30	0.00	0.00	0.00	809.50	96.03	59.67	36.36
804.40	0.00	0.00	0.00	809.60	102.99	59.86	43.13
804.50	0.00	0.00	0.00	809.70	110.64	60.05	50.59
804.60	0.00	0.00	0.00	809.80	118.82	60.24	58.58
804.70	0.00	0.00	0.00	809.90	127.42	60.43	66.99
804.80	0.00	0.00	0.00	810.00	**136.54**	**60.62**	**75.92**
804.90	0.00	0.00	0.00				
805.00	0.00	0.00	0.00				
805.10	0.01	0.01	0.00				
805.20	0.01	0.01	0.00				
805.30	0.02	0.02	0.00				
805.40	0.02	0.02	0.00				
805.50	0.02	0.02	0.00				
805.60	0.02	0.02	0.00				
805.70	0.03	0.03	0.00				
805.80	0.03	0.03	0.00				
805.90	0.03	0.03	0.00				
806.00	0.03	0.03	0.00				
806.10	0.03	0.03	0.00				
806.20	0.03	0.03	0.00				
806.30	0.04	0.04	0.00				
806.40	0.04	0.04	0.00				
806.50	0.04	0.04	0.00				
806.60	0.04	0.04	0.00				
806.70	0.04	0.04	0.00				
806.80	0.04	0.04	0.00				
806.90	0.04	0.04	0.00				
807.00	0.04	0.04	0.00				
807.10	0.05	0.05	0.00				

Stage-Area-Storage for Pond 18P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0	807.20	17,040	46,253
802.10	2,467	264	807.30	17,269	47,969
802.20	2,580	527	807.40	17,499	49,684
802.30	2,692	791	807.50	17,729	51,400
802.40	2,805	1,054	807.60	17,892	53,213
802.50	2,917	1,318	807.70	18,055	55,027
802.60	2,998	1,630	807.80	18,219	56,841
802.70	3,079	1,942	807.90	18,382	58,654
802.80	3,161	2,254	808.00	18,545	60,468
802.90	3,242	2,566	808.10	18,710	62,364
803.00	3,323	2,878	808.20	18,876	64,260
803.10	3,406	3,231	808.30	19,041	66,156
803.20	3,490	3,584	808.40	19,207	68,051
803.30	3,573	3,937	808.50	19,372	69,947
803.40	3,657	4,291	808.60	19,540	71,926
803.50	3,740	4,644	808.70	19,708	73,906
803.60	3,825	5,039	808.80	19,876	75,885
803.70	3,911	5,434	808.90	20,044	77,864
803.80	3,996	5,830	809.00	20,212	79,843
803.90	4,082	6,225	809.10	20,384	81,907
804.00	4,167	6,621	809.20	20,556	83,972
804.10	4,832	7,204	809.30	20,728	86,036
804.20	5,498	7,787	809.40	20,900	88,100
804.30	6,163	8,370	809.50	21,072	90,164
804.40	6,829	8,953	809.60	23,102	92,779
804.50	7,494	9,536	809.70	25,133	95,394
804.60	7,911	10,389	809.80	27,163	98,009
804.70	8,327	11,243	809.90	29,194	100,623
804.80	8,744	12,096	810.00	**31,224**	**103,238**
804.90	9,160	12,950			
805.00	9,577	13,804			
805.10	10,502	14,993			
805.20	11,427	16,182			
805.30	12,353	17,370			
805.40	13,278	18,559			
805.50	14,203	19,749			
805.60	14,359	21,208			
805.70	14,515	22,667			
805.80	14,670	24,126			
805.90	14,826	25,585			
806.00	14,982	27,045			
806.10	15,140	28,583			
806.20	15,299	30,120			
806.30	15,457	31,658			
806.40	15,616	33,196			
806.50	15,774	34,734			
806.60	15,935	36,351			
806.70	16,096	37,969			
806.80	16,258	39,587			
806.90	16,419	41,205			
807.00	16,580	42,822			
807.10	16,810	44,538			

Summary for Pond 19P: DA-15 SEDIMENT BASIN C

Inflow Area = 15.600 ac, 0.00% Impervious, Inflow Depth = 0.06" for 2-yr event
Inflow = 11.11 cfs @ 0.08 hrs, Volume= 0.079 af
Outflow = 0.02 cfs @ 0.17 hrs, Volume= 0.057 af, Atten= 100%, Lag= 5.2 min
Primary = 0.02 cfs @ 0.17 hrs, Volume= 0.057 af
Routed to Link 22L : PH I E&S DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 22L : PH I E&S DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 764.11' @ 0.17 hrs Surf.Area= 30,463 sf Storage= 75,505 cf (3,443 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,571.7 min (1,576.7 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

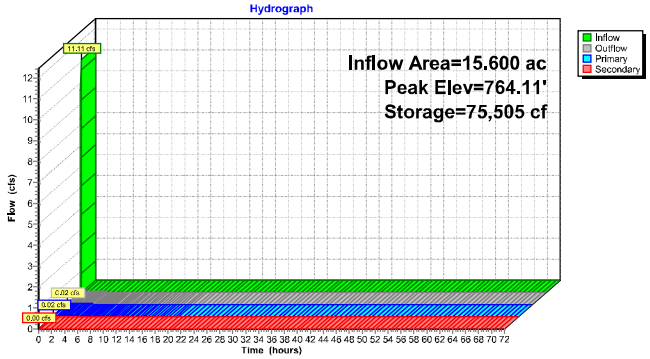
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**3.0" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.02 cfs @ 0.17 hrs HW=764.11' (Free Discharge)
└**1=CULVERT** (Passes 0.02 cfs of 38.18 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.02 cfs @ 1.11 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 19P: DA-15 SEDIMENT BASIN C



Stage-Discharge for Pond 19P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00	765.20	0.25	0.25	0.00
760.10	0.00	0.00	0.00	765.30	0.26	0.26	0.00
760.20	0.00	0.00	0.00	765.40	0.27	0.27	0.00
760.30	0.00	0.00	0.00	765.50	0.28	0.28	0.00
760.40	0.00	0.00	0.00	765.60	0.29	0.29	0.00
760.50	0.00	0.00	0.00	765.70	0.30	0.30	0.00
760.60	0.00	0.00	0.00	765.80	0.31	0.31	0.00
760.70	0.00	0.00	0.00	765.90	0.31	0.31	0.00
760.80	0.00	0.00	0.00	766.00	0.32	0.32	0.00
760.90	0.00	0.00	0.00	766.10	0.33	0.33	0.00
761.00	0.00	0.00	0.00	766.20	0.34	0.34	0.00
761.10	0.00	0.00	0.00	766.30	0.35	0.35	0.00
761.20	0.00	0.00	0.00	766.40	0.36	0.36	0.00
761.30	0.00	0.00	0.00	766.50	0.36	0.36	0.00
761.40	0.00	0.00	0.00	766.60	0.37	0.37	0.00
761.50	0.00	0.00	0.00	766.70	0.38	0.38	0.00
761.60	0.00	0.00	0.00	766.80	0.39	0.39	0.00
761.70	0.00	0.00	0.00	766.90	0.39	0.39	0.00
761.80	0.00	0.00	0.00	767.00	0.40	0.40	0.00
761.90	0.00	0.00	0.00	767.10	0.41	0.41	0.00
762.00	0.00	0.00	0.00	767.20	0.41	0.41	0.00
762.10	0.00	0.00	0.00	767.30	0.42	0.42	0.00
762.20	0.00	0.00	0.00	767.40	0.43	0.43	0.00
762.30	0.00	0.00	0.00	767.50	0.43	0.43	0.00
762.40	0.00	0.00	0.00	767.60	0.44	0.44	0.00
762.50	0.00	0.00	0.00	767.70	2.07	2.07	0.00
762.60	0.00	0.00	0.00	767.80	5.05	5.05	0.00
762.70	0.00	0.00	0.00	767.90	8.90	8.90	0.00
762.80	0.00	0.00	0.00	768.00	13.46	13.46	0.00
762.90	0.00	0.00	0.00	768.10	18.63	18.63	0.00
763.00	0.00	0.00	0.00	768.20	24.35	24.35	0.00
763.10	0.00	0.00	0.00	768.30	30.57	30.57	0.00
763.20	0.00	0.00	0.00	768.40	37.24	37.24	0.00
763.30	0.00	0.00	0.00	768.50	44.35	44.35	0.00
763.40	0.00	0.00	0.00	768.60	51.87	51.87	0.00
763.50	0.00	0.00	0.00	768.70	56.61	56.61	0.00
763.60	0.00	0.00	0.00	768.80	56.94	56.94	0.00
763.70	0.00	0.00	0.00	768.90	57.27	57.27	0.00
763.80	0.00	0.00	0.00	769.00	57.60	57.60	0.00
763.90	0.00	0.00	0.00	769.10	57.93	57.93	0.00
764.00	0.00	0.00	0.00	769.20	58.26	58.26	0.00
764.10	0.02	0.02	0.00	769.30	58.59	58.59	0.00
764.20	0.06	0.06	0.00	769.40	59.63	58.91	0.72
764.30	0.10	0.10	0.00	769.50	63.02	59.23	3.79
764.40	0.12	0.12	0.00	769.60	67.81	59.55	8.26
764.50	0.14	0.14	0.00	769.70	73.73	59.87	13.86
764.60	0.16	0.16	0.00	769.80	80.63	60.19	20.44
764.70	0.18	0.18	0.00	769.90	88.39	60.50	27.89
764.80	0.19	0.19	0.00	770.00	96.78	60.81	35.96
764.90	0.21	0.21	0.00	770.10	105.62	61.13	44.49
765.00	0.22	0.22	0.00	770.20	115.26	61.44	53.82
765.10	0.23	0.23	0.00	770.30	125.80	61.74	64.06

Stage-Discharge for Pond 19P: DA-15 SEDIMENT BASIN C (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
770.40	137.17	62.05	75.11
770.50	149.40	62.36	87.04
770.60	162.28	62.66	99.62
770.70	175.76	62.96	112.80
770.80	189.81	63.26	126.55
770.90	204.38	63.56	140.82
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 19P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	765.20	37,758	114,150
760.10	14,188	1,454	765.30	38,077	117,941
760.20	14,426	2,909	765.40	38,397	121,733
760.30	14,663	4,363	765.50	38,717	125,525
760.40	14,901	5,818	765.60	38,945	129,453
760.50	15,139	7,272	765.70	39,172	133,382
760.60	15,276	8,821	765.80	39,400	137,311
760.70	15,414	10,369	765.90	39,627	141,239
760.80	15,551	11,917	766.00	39,855	145,168
760.90	15,689	13,465	766.10	40,085	149,211
761.00	15,826	15,014	766.20	40,316	153,254
761.10	15,966	16,631	766.30	40,546	157,297
761.20	16,105	18,249	766.40	40,777	161,340
761.30	16,245	19,866	766.50	41,007	165,383
761.40	16,384	21,483	766.60	41,240	169,542
761.50	16,524	23,101	766.70	41,473	173,701
761.60	16,666	24,789	766.80	41,707	177,860
761.70	16,808	26,477	766.90	41,940	182,019
761.80	16,949	28,165	767.00	42,173	186,178
761.90	17,091	29,852	767.10	42,409	190,455
762.00	17,233	31,540	767.20	42,645	194,731
762.10	17,377	33,300	767.30	42,880	199,007
762.20	17,521	35,059	767.40	43,116	203,283
762.30	17,664	36,818	767.50	43,352	207,560
762.40	17,808	38,577	767.60	43,591	211,954
762.50	17,952	40,337	767.70	43,829	216,349
762.60	18,096	42,168	767.80	44,068	220,744
762.70	18,244	44,000	767.90	44,306	225,139
762.80	18,390	45,832	768.00	44,545	229,534
762.90	18,536	47,663	768.10	44,786	234,049
763.00	18,682	49,495	768.20	45,028	238,563
763.10	19,206	51,494	768.30	45,269	243,078
763.20	19,729	53,493	768.40	45,511	247,593
763.30	20,253	55,492	768.50	45,752	252,108
763.40	20,776	57,491	768.60	45,996	256,744
763.50	21,300	59,491	768.70	46,240	261,380
763.60	22,837	62,005	768.80	46,484	266,017
763.70	24,374	64,519	768.90	46,728	270,653
763.80	25,910	67,033	769.00	46,972	275,289
763.90	27,447	69,547	769.10	47,219	280,048
764.00	28,984	72,062	769.20	47,466	284,807
764.10	30,379	75,309	769.30	47,712	289,566
764.20	31,774	78,556	769.40	47,959	294,325
764.30	33,168	81,803	769.50	48,206	299,084
764.40	34,563	85,050	769.60	48,455	303,966
764.50	35,958	88,297	769.70	48,705	308,849
764.60	36,190	91,951	769.80	48,954	313,732
764.70	36,422	95,605	769.90	49,204	318,615
764.80	36,654	99,258	770.00	49,453	323,498
764.90	36,886	102,912	770.10	49,706	328,507
765.00	37,118	106,566	770.20	49,960	333,516
765.10	37,438	110,358	770.30	50,213	338,524

Stage-Area-Storage for Pond 19P: DA-15 SEDIMENT BASIN C (continued)

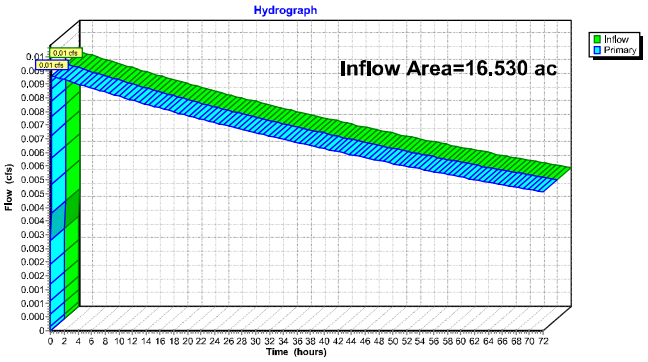
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
770.40	50,467	343,533
770.50	50,720	348,542
770.60	52,330	354,016
770.70	53,940	359,491
770.80	55,550	364,965
770.90	57,160	370,439
771.00	**58,770**	**375,914**

Summary for Link 20L: PH I E&S DA-04 (POST ROUTING)

Inflow Area = 16.530 ac, 0.00% Impervious, Inflow Depth > 0.03" for 2-yr event
Inflow = 0.01 cfs @ 0.17 hrs, Volume= 0.041 af
Primary = 0.01 cfs @ 0.17 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 20L: PH I E&S DA-04 (POST ROUTING)

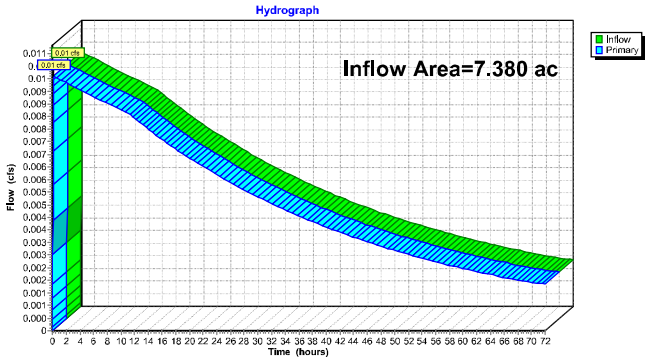


Summary for Link 21L: PH I E&S DA-06 (POST ROUTING)

Inflow Area = 7.380 ac, 0.00% Impervious, Inflow Depth > 0.05" for 2-yr event
Inflow = 0.01 cfs @ 0.17 hrs, Volume= 0.030 af
Primary = 0.01 cfs @ 0.17 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 21L: PH I E&S DA-06 (POST ROUTING)

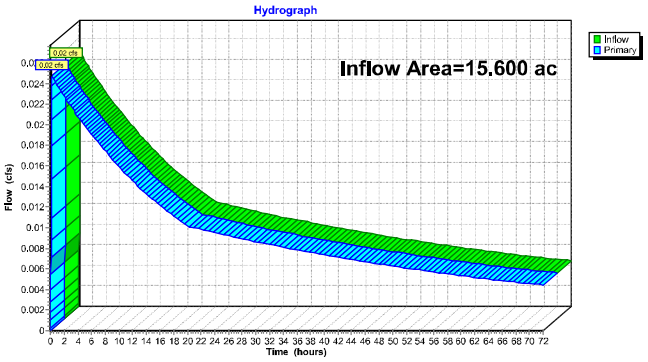


Summary for Link 22L: PH I E&S DA-15 (POST ROUTING)

Inflow Area = 15.600 ac, 0.00% Impervious, Inflow Depth > 0.04" for 2-yr event
Inflow = 0.02 cfs @ 0.17 hrs, Volume= 0.057 af
Primary = 0.02 cfs @ 0.17 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 22L: PH I E&S DA-15 (POST ROUTING)



Summary for Subcatchment 14S: PH I E&S DA-04

[48] Hint: Peak<CiA due to short duration

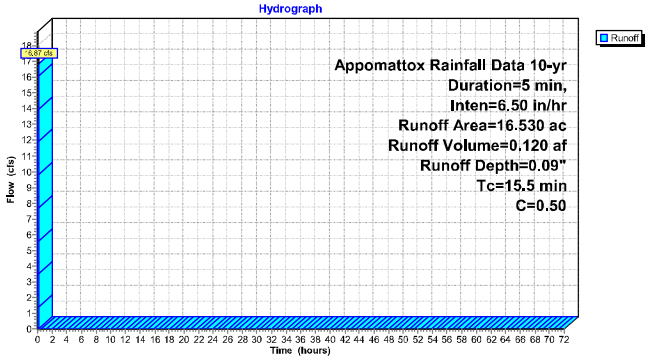
Runoff = 16.87 cfs @ 0.08 hrs, Volume= 0.120 af, Depth= 0.09"
Routed to Pond 17P : DA-04 SEDIMENT BASIN A

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 10-yr Duration=5 min, Inten=6.50 in/hr

Area (ac)	C	Description
16.530	0.50	
16.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5					Direct Entry,

Subcatchment 14S: PH I E&S DA-04



Summary for Subcatchment 15S: PH I E&S DA-06

[48] Hint: Peak<CiA due to short duration

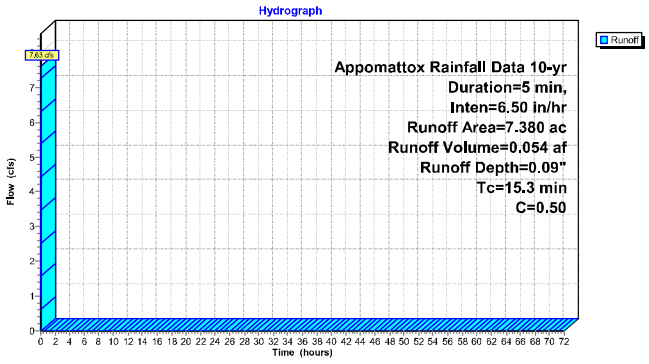
Runoff = 7.63 cfs @ 0.08 hrs, Volume= 0.054 af, Depth= 0.09"
Routed to Pond 18P : DA-06 SEDIMENT BASIN B

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 10-yr Duration=5 min, Inten=6.50 in/hr

Area (ac)	C	Description
7.380	0.50	
7.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3					Direct Entry,

Subcatchment 15S: PH I E&S DA-06



Summary for Subcatchment 16S: PH I E&S DA-15

[48] Hint: Peak<CiA due to short duration

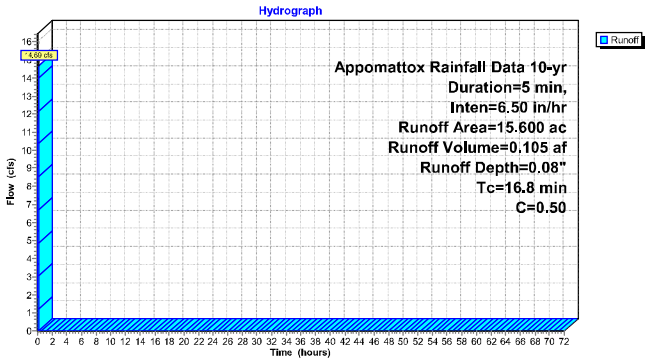
Runoff = 14.69 cfs @ 0.08 hrs, Volume= 0.105 af, Depth= 0.08"
Routed to Pond 19P : DA-15 SEDIMENT BASIN C

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 10-yr Duration=5 min, Inten=6.50 in/hr

Area (ac)	C	Description
15.600	0.50	
15.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8					Direct Entry,

Subcatchment 16S: PH I E&S DA-15



Summary for Pond 17P: DA-04 SEDIMENT BASIN A

Inflow Area = 16.530 ac, 0.00% Impervious, Inflow Depth = 0.09" for 10-yr event
Inflow = 16.87 cfs @ 0.08 hrs, Volume= 0.120 af
Outflow = 0.02 cfs @ 0.17 hrs, Volume= 0.057 af, Atten= 100%, Lag= 5.3 min
Primary = 0.02 cfs @ 0.17 hrs, Volume= 0.057 af
Routed to Link 20L : PH I E&S DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 20L : PH I E&S DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 711.09' @ 0.17 hrs Surf.Area= 56,714 sf Storage= 150,556 cf (5,233 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,843.3 min (1,848.3 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

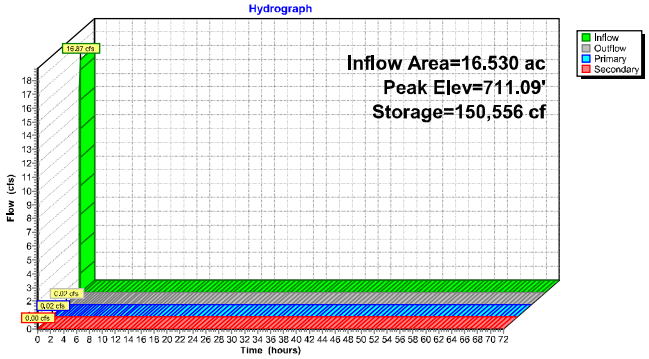
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.01 cfs @ 0.17 hrs HW=711.09' (Free Discharge)
└**1=CULVERT** (Passes 0.01 cfs of 34.98 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.01 cfs @ 1.00 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 17P: DA-04 SEDIMENT BASIN A



Stage-Discharge for Pond 17P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00	712.20	0.23	0.23	0.00
707.10	0.00	0.00	0.00	712.30	0.24	0.24	0.00
707.20	0.00	0.00	0.00	712.40	0.25	0.25	0.00
707.30	0.00	0.00	0.00	712.50	0.26	0.26	0.00
707.40	0.00	0.00	0.00	712.60	0.27	0.27	0.00
707.50	0.00	0.00	0.00	712.70	0.28	0.28	0.00
707.60	0.00	0.00	0.00	712.80	0.29	0.29	0.00
707.70	0.00	0.00	0.00	712.90	0.29	0.29	0.00
707.80	0.00	0.00	0.00	713.00	0.30	0.30	0.00
707.90	0.00	0.00	0.00	713.10	0.31	0.31	0.00
708.00	0.00	0.00	0.00	713.20	0.32	0.32	0.00
708.10	0.00	0.00	0.00	713.30	0.33	0.33	0.00
708.20	0.00	0.00	0.00	713.40	0.33	0.33	0.00
708.30	0.00	0.00	0.00	713.50	0.34	0.34	0.00
708.40	0.00	0.00	0.00	713.60	1.97	1.97	0.00
708.50	0.00	0.00	0.00	713.70	4.95	4.95	0.00
708.60	0.00	0.00	0.00	713.80	8.80	8.80	0.00
708.70	0.00	0.00	0.00	713.90	13.36	13.36	0.00
708.80	0.00	0.00	0.00	714.00	18.54	18.54	0.00
708.90	0.00	0.00	0.00	714.10	24.25	24.25	0.00
709.00	0.00	0.00	0.00	714.20	30.47	30.47	0.00
709.10	0.00	0.00	0.00	714.30	37.15	37.15	0.00
709.20	0.00	0.00	0.00	714.40	44.26	44.26	0.00
709.30	0.00	0.00	0.00	714.50	51.77	51.77	0.00
709.40	0.00	0.00	0.00	714.60	54.27	54.27	0.00
709.50	0.00	0.00	0.00	714.70	54.72	54.72	0.00
709.60	0.00	0.00	0.00	714.80	55.17	55.17	0.00
709.70	0.00	0.00	0.00	714.90	55.61	55.61	0.00
709.80	0.00	0.00	0.00	715.00	56.05	56.05	0.00
709.90	0.00	0.00	0.00	715.10	57.78	56.49	1.29
710.00	0.00	0.00	0.00	715.20	60.63	56.92	3.71
710.10	0.00	0.00	0.00	715.30	64.30	57.35	6.95
710.20	0.00	0.00	0.00	715.40	68.67	57.77	10.90
710.30	0.00	0.00	0.00	715.50	73.66	58.20	15.46
710.40	0.00	0.00	0.00	715.60	79.24	58.61	20.63
710.50	0.00	0.00	0.00	715.70	85.11	59.03	26.08
710.60	0.00	0.00	0.00	715.80	91.41	59.44	31.96
710.70	0.00	0.00	0.00	715.90	98.46	59.86	38.61
710.80	0.00	0.00	0.00	716.00	106.03	60.26	45.76
710.90	0.00	0.00	0.00	716.10	114.29	60.67	53.63
711.00	0.00	0.00	0.00	716.20	123.12	61.07	62.05
711.10	0.02	0.02	0.00	716.30	132.38	61.47	70.91
711.20	0.06	0.06	0.00	716.40	142.16	61.87	80.29
711.30	0.09	0.09	0.00	716.50	152.30	62.26	90.04
711.40	0.12	0.12	0.00	716.60	162.94	62.66	100.28
711.50	0.14	0.14	0.00	716.70	174.27	63.05	111.23
711.60	0.15	0.15	0.00	716.80	186.14	63.43	122.71
711.70	0.17	0.17	0.00	716.90	198.55	63.82	134.73
711.80	0.18	0.18	0.00	717.00	211.49	64.20	147.29
711.90	0.19	0.19	0.00	717.10	224.97	64.58	160.39
712.00	0.21	0.21	0.00	717.20	239.00	64.96	174.04
712.10	0.22	0.22	0.00	717.30	253.58	65.34	188.25

Stage-Discharge for Pond 17P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
717.40	268.71	65.71	203.00
717.50	284.40	66.08	218.32
717.60	300.64	66.45	234.19
717.70	317.45	66.82	250.63
717.80	334.83	67.19	267.64
717.90	352.77	67.55	285.22
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 17P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0	712.20	68,641	222,808
707.10	29,102	2,947	712.30	69,006	229,691
707.20	29,350	5,895	712.40	69,370	236,573
707.30	29,599	8,842	712.50	69,735	243,455
707.40	29,847	11,790	712.60	70,101	250,520
707.50	30,095	14,737	712.70	70,466	257,585
707.60	30,346	17,809	712.80	70,832	264,650
707.70	30,596	20,882	712.90	71,197	271,715
707.80	30,847	23,954	713.00	71,563	278,780
707.90	31,097	27,026	713.10	72,052	286,058
708.00	31,348	30,098	713.20	72,541	293,337
708.10	31,600	33,296	713.30	73,029	300,615
708.20	31,853	36,494	713.40	73,518	307,894
708.30	32,105	39,692	713.50	74,007	315,172
708.40	32,358	42,890	713.60	74,372	322,664
708.50	32,610	46,088	713.70	74,737	330,156
708.60	32,864	49,412	713.80	75,102	337,648
708.70	33,119	52,737	713.90	75,467	345,140
708.80	33,373	56,061	714.00	75,832	352,632
708.90	33,628	59,386	714.10	76,199	360,307
709.00	33,882	62,711	714.20	76,567	367,982
709.10	34,139	66,163	714.30	76,934	375,657
709.20	34,395	69,615	714.40	77,302	383,332
709.30	34,652	73,068	714.50	77,669	391,007
709.40	34,908	76,520	714.60	78,039	398,867
709.50	35,165	79,972	714.70	78,410	406,726
709.60	35,424	83,554	714.80	78,780	414,586
709.70	35,683	87,135	714.90	79,151	422,445
709.80	35,942	90,716	715.00	79,521	430,305
709.90	36,201	94,297	715.10	79,894	438,350
710.00	36,460	97,879	715.20	80,267	446,395
710.10	39,025	102,166	715.30	80,639	454,441
710.20	41,591	106,453	715.40	81,012	462,486
710.30	44,156	110,741	715.50	81,385	470,531
710.40	46,722	115,028	715.60	81,761	478,764
710.50	49,287	119,315	715.70	82,136	486,996
710.60	50,379	124,517	715.80	82,512	495,228
710.70	51,471	129,719	715.90	82,887	503,461
710.80	52,562	134,920	716.00	83,263	511,693
710.90	53,654	140,122	716.10	83,641	520,114
711.00	54,746	145,324	716.20	84,019	528,535
711.10	57,019	151,366	716.30	84,398	536,956
711.20	59,292	157,409	716.40	84,776	545,377
711.30	61,565	163,452	716.50	85,154	553,798
711.40	63,838	169,495	716.60	85,535	562,408
711.50	66,111	175,538	716.70	85,916	571,019
711.60	66,471	182,239	716.80	86,296	579,629
711.70	66,831	188,940	716.90	86,677	588,240
711.80	67,192	195,641	717.00	87,058	596,851
711.90	67,552	202,342	717.10	88,443	605,903
712.00	67,912	209,044	717.20	89,829	614,955
712.10	68,277	215,926	717.30	91,214	624,007

Stage-Area-Storage for Pond 17P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
717.40	92,600	633,059
717.50	93,985	642,111
717.60	95,403	651,864
717.70	96,821	661,617
717.80	98,239	671,370
717.90	99,657	681,123
718.00	**101,075**	**690,876**

Summary for Pond 18P: DA-06 SEDIMENT BASIN B

Inflow Area = 7.380 ac, 0.00% Impervious, Inflow Depth = 0.09" for 10-yr event
Inflow = 7.63 cfs @ 0.08 hrs, Volume= 0.054 af
Outflow = 0.01 cfs @ 0.17 hrs, Volume= 0.041 af, Atten= 100%, Lag= 5.2 min
Primary = 0.01 cfs @ 0.17 hrs, Volume= 0.041 af
Routed to Link 21L : PH I E&S DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 21L : PH I E&S DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 805.20' @ 0.17 hrs Surf.Area= 11,417 sf Storage= 16,168 cf (2,365 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,621.5 min (1,626.5 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

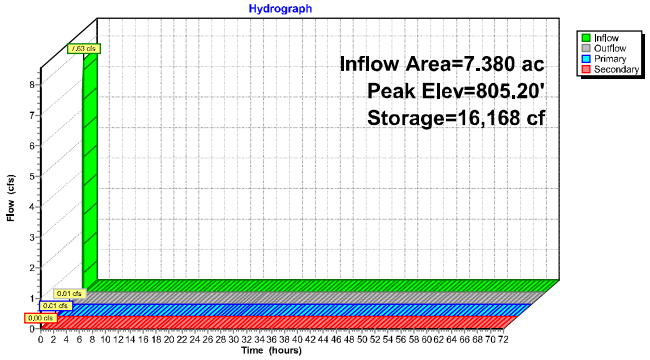
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.01 cfs @ 0.17 hrs HW=805.20' (Free Discharge)
└**1=CULVERT** (Passes 0.01 cfs of 50.76 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.01 cfs @ 1.88 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 18P: DA-06 SEDIMENT BASIN B



Stage-Discharge for Pond 18P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00
802.10	0.00	0.00	0.00
802.20	0.00	0.00	0.00
802.30	0.00	0.00	0.00
802.40	0.00	0.00	0.00
802.50	0.00	0.00	0.00
802.60	0.00	0.00	0.00
802.70	0.00	0.00	0.00
802.80	0.00	0.00	0.00
802.90	0.00	0.00	0.00
803.00	0.00	0.00	0.00
803.10	0.00	0.00	0.00
803.20	0.00	0.00	0.00
803.30	0.00	0.00	0.00
803.40	0.00	0.00	0.00
803.50	0.00	0.00	0.00
803.60	0.00	0.00	0.00
803.70	0.00	0.00	0.00
803.80	0.00	0.00	0.00
803.90	0.00	0.00	0.00
804.00	0.00	0.00	0.00
804.10	0.00	0.00	0.00
804.20	0.00	0.00	0.00
804.30	0.00	0.00	0.00
804.40	0.00	0.00	0.00
804.50	0.00	0.00	0.00
804.60	0.00	0.00	0.00
804.70	0.00	0.00	0.00
804.80	0.00	0.00	0.00
804.90	0.00	0.00	0.00
805.00	0.00	0.00	0.00
805.10	0.01	0.01	0.00
805.20	0.01	0.01	0.00
805.30	0.02	0.02	0.00
805.40	0.02	0.02	0.00
805.50	0.02	0.02	0.00
805.60	0.02	0.02	0.00
805.70	0.03	0.03	0.00
805.80	0.03	0.03	0.00
805.90	0.03	0.03	0.00
806.00	0.03	0.03	0.00
806.10	0.03	0.03	0.00
806.20	0.03	0.03	0.00
806.30	0.04	0.04	0.00
806.40	0.04	0.04	0.00
806.50	0.04	0.04	0.00
806.60	0.04	0.04	0.00
806.70	0.04	0.04	0.00
806.80	0.04	0.04	0.00
806.90	0.04	0.04	0.00
807.00	0.04	0.04	0.00
807.10	0.05	0.05	0.00
807.20	0.05	0.05	0.00
807.30	0.05	0.05	0.00
807.40	0.05	0.05	0.00
807.50	0.05	0.05	0.00
807.60	1.68	1.68	0.00
807.70	4.65	4.65	0.00
807.80	8.49	8.49	0.00
807.90	13.05	13.05	0.00
808.00	18.21	18.21	0.00
808.10	23.93	23.93	0.00
808.20	30.14	30.14	0.00
808.30	36.81	36.81	0.00
808.40	43.91	43.91	0.00
808.50	51.42	51.42	0.00
808.60	57.92	57.92	0.00
808.70	59.32	58.11	1.21
808.80	61.78	58.31	3.47
808.90	65.01	58.51	6.51
809.00	68.92	58.70	10.22
809.10	73.41	58.90	14.51
809.20	78.47	59.09	19.37
809.30	83.80	59.28	24.52
809.40	89.55	59.48	30.07
809.50	96.03	59.67	36.36
809.60	102.99	59.86	43.13
809.70	110.64	60.05	50.59
809.80	118.82	60.24	58.58
809.90	127.42	60.43	66.99
810.00	**136.54**	**60.62**	**75.92**

Stage-Area-Storage for Pond 18P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0
802.10	2,467	264
802.20	2,580	527
802.30	2,692	791
802.40	2,805	1,054
802.50	2,917	1,318
802.60	2,998	1,630
802.70	3,079	1,942
802.80	3,161	2,254
802.90	3,242	2,566
803.00	3,323	2,878
803.10	3,406	3,231
803.20	3,490	3,584
803.30	3,573	3,937
803.40	3,657	4,291
803.50	3,740	4,644
803.60	3,825	5,039
803.70	3,911	5,434
803.80	3,996	5,830
803.90	4,082	6,225
804.00	4,167	6,621
804.10	4,832	7,204
804.20	5,498	7,787
804.30	6,163	8,370
804.40	6,829	8,953
804.50	7,494	9,536
804.60	7,911	10,389
804.70	8,327	11,243
804.80	8,744	12,096
804.90	9,160	12,950
805.00	9,577	13,804
805.10	10,502	14,993
805.20	11,427	16,182
805.30	12,353	17,370
805.40	13,278	18,559
805.50	14,203	19,749
805.60	14,359	21,208
805.70	14,515	22,667
805.80	14,670	24,126
805.90	14,826	25,585
806.00	14,982	27,045
806.10	15,140	28,583
806.20	15,299	30,120
806.30	15,457	31,658
806.40	15,616	33,196
806.50	15,774	34,734
806.60	15,935	36,351
806.70	16,096	37,969
806.80	16,258	39,587
806.90	16,419	41,205
807.00	16,580	42,822
807.10	16,810	44,538
807.20	17,040	46,253
807.30	17,269	47,969
807.40	17,499	49,684
807.50	17,729	51,400
807.60	17,892	53,213
807.70	18,055	55,027
807.80	18,219	56,841
807.90	18,382	58,654
808.00	18,545	60,468
808.10	18,710	62,364
808.20	18,876	64,260
808.30	19,041	66,156
808.40	19,207	68,051
808.50	19,372	69,947
808.60	19,540	71,926
808.70	19,708	73,906
808.80	19,876	75,885
808.90	20,044	77,864
809.00	20,212	79,843
809.10	20,384	81,907
809.20	20,556	83,972
809.30	20,728	86,036
809.40	20,900	88,100
809.50	21,072	90,164
809.60	23,102	92,779
809.70	25,133	95,394
809.80	27,163	98,009
809.90	29,194	100,623
810.00	**31,224**	**103,238**

Summary for Pond 19P: DA-15 SEDIMENT BASIN C

Inflow Area = 15.600 ac, 0.00% Impervious, Inflow Depth = 0.08" for 10-yr event
Inflow = 14.69 cfs @ 0.08 hrs, Volume= 0.105 af
Outflow = 0.04 cfs @ 0.17 hrs, Volume= 0.078 af, Atten= 100%, Lag= 5.2 min
Primary = 0.04 cfs @ 0.17 hrs, Volume= 0.078 af
Routed to Link 22L : PH I E&S DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 22L : PH I E&S DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 764.14' @ 0.17 hrs Surf.Area= 30,938 sf Storage= 76,611 cf (4,550 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,426.6 min (1,431.6 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

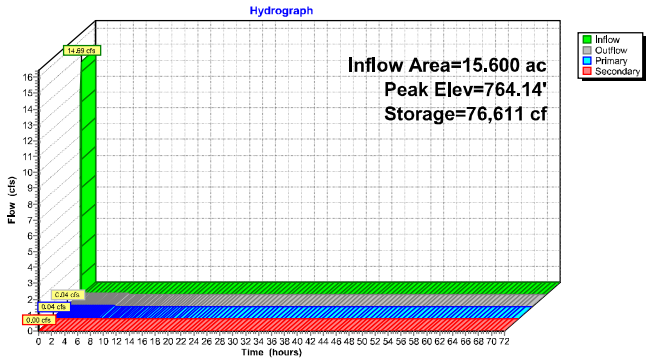
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**3.0" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.04 cfs @ 0.17 hrs HW=764.14' (Free Discharge)
└**1=CULVERT** (Passes 0.04 cfs of 38.35 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.04 cfs @ 1.27 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 19P: DA-15 SEDIMENT BASIN C



Stage-Discharge for Pond 19P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00	765.20	0.25	0.25	0.00
760.10	0.00	0.00	0.00	765.30	0.26	0.26	0.00
760.20	0.00	0.00	0.00	765.40	0.27	0.27	0.00
760.30	0.00	0.00	0.00	765.50	0.28	0.28	0.00
760.40	0.00	0.00	0.00	765.60	0.29	0.29	0.00
760.50	0.00	0.00	0.00	765.70	0.30	0.30	0.00
760.60	0.00	0.00	0.00	765.80	0.31	0.31	0.00
760.70	0.00	0.00	0.00	765.90	0.31	0.31	0.00
760.80	0.00	0.00	0.00	766.00	0.32	0.32	0.00
760.90	0.00	0.00	0.00	766.10	0.33	0.33	0.00
761.00	0.00	0.00	0.00	766.20	0.34	0.34	0.00
761.10	0.00	0.00	0.00	766.30	0.35	0.35	0.00
761.20	0.00	0.00	0.00	766.40	0.36	0.36	0.00
761.30	0.00	0.00	0.00	766.50	0.36	0.36	0.00
761.40	0.00	0.00	0.00	766.60	0.37	0.37	0.00
761.50	0.00	0.00	0.00	766.70	0.38	0.38	0.00
761.60	0.00	0.00	0.00	766.80	0.39	0.39	0.00
761.70	0.00	0.00	0.00	766.90	0.39	0.39	0.00
761.80	0.00	0.00	0.00	767.00	0.40	0.40	0.00
761.90	0.00	0.00	0.00	767.10	0.41	0.41	0.00
762.00	0.00	0.00	0.00	767.20	0.41	0.41	0.00
762.10	0.00	0.00	0.00	767.30	0.42	0.42	0.00
762.20	0.00	0.00	0.00	767.40	0.43	0.43	0.00
762.30	0.00	0.00	0.00	767.50	0.43	0.43	0.00
762.40	0.00	0.00	0.00	767.60	0.44	0.44	0.00
762.50	0.00	0.00	0.00	767.70	2.07	2.07	0.00
762.60	0.00	0.00	0.00	767.80	5.05	5.05	0.00
762.70	0.00	0.00	0.00	767.90	8.90	8.90	0.00
762.80	0.00	0.00	0.00	768.00	13.46	13.46	0.00
762.90	0.00	0.00	0.00	768.10	18.63	18.63	0.00
763.00	0.00	0.00	0.00	768.20	24.35	24.35	0.00
763.10	0.00	0.00	0.00	768.30	30.57	30.57	0.00
763.20	0.00	0.00	0.00	768.40	37.24	37.24	0.00
763.30	0.00	0.00	0.00	768.50	44.35	44.35	0.00
763.40	0.00	0.00	0.00	768.60	51.87	51.87	0.00
763.50	0.00	0.00	0.00	768.70	56.61	56.61	0.00
763.60	0.00	0.00	0.00	768.80	56.94	56.94	0.00
763.70	0.00	0.00	0.00	768.90	57.27	57.27	0.00
763.80	0.00	0.00	0.00	769.00	57.60	57.60	0.00
763.90	0.00	0.00	0.00	769.10	57.93	57.93	0.00
764.00	0.00	0.00	0.00	769.20	58.26	58.26	0.00
764.10	0.02	0.02	0.00	769.30	58.59	58.59	0.00
764.20	0.06	0.06	0.00	769.40	59.63	58.91	0.72
764.30	0.10	0.10	0.00	769.50	63.02	59.23	3.79
764.40	0.12	0.12	0.00	769.60	67.81	59.55	8.26
764.50	0.14	0.14	0.00	769.70	73.73	59.87	13.86
764.60	0.16	0.16	0.00	769.80	80.63	60.19	20.44
764.70	0.18	0.18	0.00	769.90	88.39	60.50	27.89
764.80	0.19	0.19	0.00	770.00	96.78	60.81	35.96
764.90	0.21	0.21	0.00	770.10	105.62	61.13	44.49
765.00	0.22	0.22	0.00	770.20	115.26	61.44	53.82
765.10	0.23	0.23	0.00	770.30	125.80	61.74	64.06

Stage-Discharge for Pond 19P: DA-15 SEDIMENT BASIN C (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
770.40	137.17	62.05	75.11
770.50	149.40	62.36	87.04
770.60	162.28	62.66	99.62
770.70	175.76	62.96	112.80
770.80	189.81	63.26	126.55
770.90	204.38	63.56	140.82
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 19P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	765.20	37,758	114,150
760.10	14,188	1,454	765.30	38,077	117,941
760.20	14,426	2,909	765.40	38,397	121,733
760.30	14,663	4,363	765.50	38,717	125,525
760.40	14,901	5,818	765.60	38,945	129,453
760.50	15,139	7,272	765.70	39,172	133,382
760.60	15,276	8,821	765.80	39,400	137,311
760.70	15,414	10,369	765.90	39,627	141,239
760.80	15,551	11,917	766.00	39,855	145,168
760.90	15,689	13,465	766.10	40,085	149,211
761.00	15,826	15,014	766.20	40,316	153,254
761.10	15,966	16,631	766.30	40,546	157,297
761.20	16,105	18,249	766.40	40,777	161,340
761.30	16,245	19,866	766.50	41,007	165,383
761.40	16,384	21,483	766.60	41,240	169,542
761.50	16,524	23,101	766.70	41,473	173,701
761.60	16,666	24,789	766.80	41,707	177,860
761.70	16,808	26,477	766.90	41,940	182,019
761.80	16,949	28,165	767.00	42,173	186,178
761.90	17,091	29,852	767.10	42,409	190,455
762.00	17,233	31,540	767.20	42,645	194,731
762.10	17,377	33,300	767.30	42,880	199,007
762.20	17,521	35,059	767.40	43,116	203,283
762.30	17,664	36,818	767.50	43,352	207,560
762.40	17,808	38,577	767.60	43,591	211,954
762.50	17,952	40,337	767.70	43,829	216,349
762.60	18,098	42,168	767.80	44,068	220,744
762.70	18,244	44,000	767.90	44,306	225,139
762.80	18,390	45,832	768.00	44,545	229,534
762.90	18,536	47,663	768.10	44,786	234,049
763.00	18,682	49,495	768.20	45,028	238,563
763.10	19,206	51,494	768.30	45,269	243,078
763.20	19,729	53,493	768.40	45,511	247,593
763.30	20,253	55,492	768.50	45,752	252,108
763.40	20,776	57,491	768.60	45,996	256,744
763.50	21,300	59,491	768.70	46,240	261,380
763.60	22,837	62,005	768.80	46,484	266,017
763.70	24,374	64,519	768.90	46,728	270,653
763.80	25,910	67,033	769.00	46,972	275,289
763.90	27,447	69,547	769.10	47,219	280,048
764.00	28,984	72,062	769.20	47,466	284,807
764.10	30,379	75,309	769.30	47,712	289,566
764.20	31,774	78,556	769.40	47,959	294,325
764.30	33,168	81,803	769.50	48,206	299,084
764.40	34,563	85,050	769.60	48,455	303,966
764.50	35,958	88,297	769.70	48,705	308,849
764.60	36,190	91,951	769.80	48,954	313,732
764.70	36,422	95,605	769.90	49,204	318,615
764.80	36,654	99,258	770.00	49,453	323,498
764.90	36,886	102,912	770.10	49,706	328,507
765.00	37,118	106,566	770.20	49,960	333,516
765.10	37,438	110,358	770.30	50,213	338,524

Stage-Area-Storage for Pond 19P: DA-15 SEDIMENT BASIN C (continued)

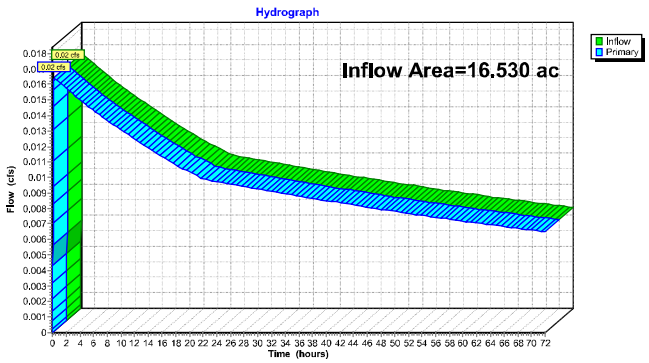
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
770.40	50,467	343,533
770.50	50,720	348,542
770.60	52,330	354,016
770.70	53,940	359,491
770.80	55,550	364,965
770.90	57,160	370,439
771.00	**58,770**	**375,914**

Summary for Link 20L: PH I E&S DA-04 (POST ROUTING)

Inflow Area = 16.530 ac, 0.00% Impervious, Inflow Depth > 0.04" for 10-yr event
Inflow = 0.02 cfs @ 0.17 hrs, Volume= 0.057 af
Primary = 0.02 cfs @ 0.17 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 20L: PH I E&S DA-04 (POST ROUTING)

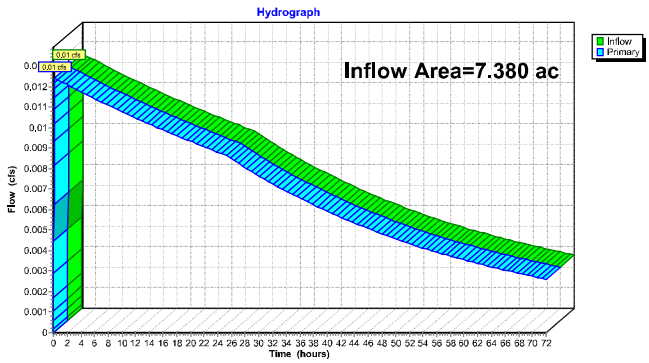


Summary for Link 21L: PH I E&S DA-06 (POST ROUTING)

Inflow Area = 7.380 ac, 0.00% Impervious, Inflow Depth > 0.07" for 10-yr event
Inflow = 0.01 cfs @ 0.17 hrs, Volume= 0.041 af
Primary = 0.01 cfs @ 0.17 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 21L: PH I E&S DA-06 (POST ROUTING)

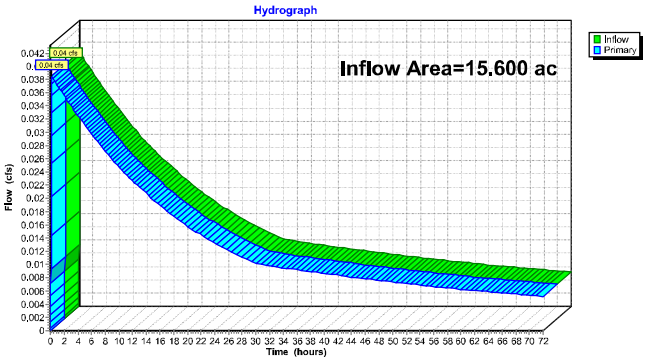


Summary for Link 22L: PH I E&S DA-15 (POST ROUTING)

Inflow Area = 15.600 ac, 0.00% Impervious, Inflow Depth > 0.06" for 10-yr event
Inflow = 0.04 cfs @ 0.17 hrs, Volume= 0.078 af
Primary = 0.04 cfs @ 0.17 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 22L: PH I E&S DA-15 (POST ROUTING)



Summary for Subcatchment 14S: PH I E&S DA-04

[48] Hint: Peak<CiA due to short duration

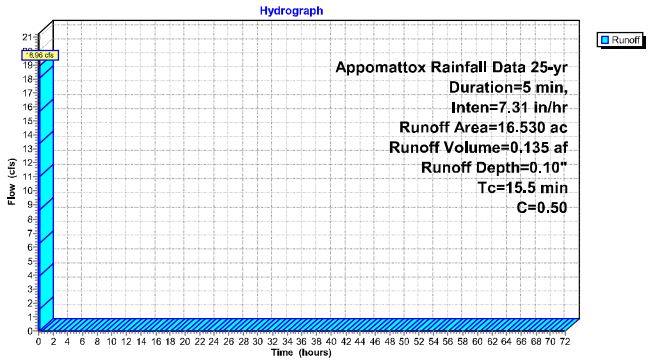
Runoff = 18.96 cfs @ 0.08 hrs, Volume= 0.135 af, Depth= 0.10"
Routed to Pond 17P : DA-04 SEDIMENT BASIN A

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 25-yr Duration=5 min, Inten=7.31 in/hr

Area (ac)	C	Description
16.530	0.50	
16.530		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5					Direct Entry,

Subcatchment 14S: PH I E&S DA-04



Summary for Subcatchment 15S: PH I E&S DA-06

[48] Hint: Peak<CiA due to short duration

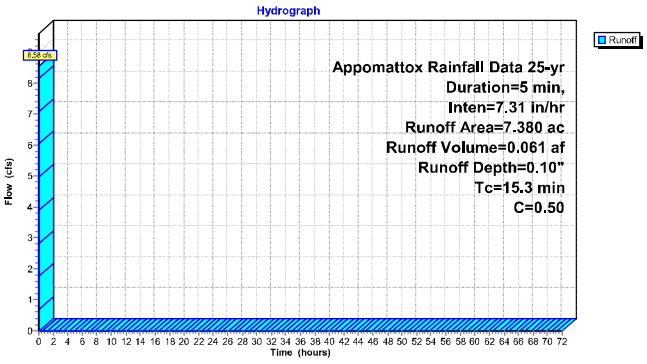
Runoff = 8.58 cfs @ 0.08 hrs, Volume= 0.061 af, Depth= 0.10"
Routed to Pond 18P : DA-06 SEDIMENT BASIN B

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 25-yr Duration=5 min, Inten=7.31 in/hr

Area (ac)	C	Description
7.380	0.50	
7.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3					Direct Entry,

Subcatchment 15S: PH I E&S DA-06



Summary for Subcatchment 16S: PH I E&S DA-15

[48] Hint: Peak<CiA due to short duration

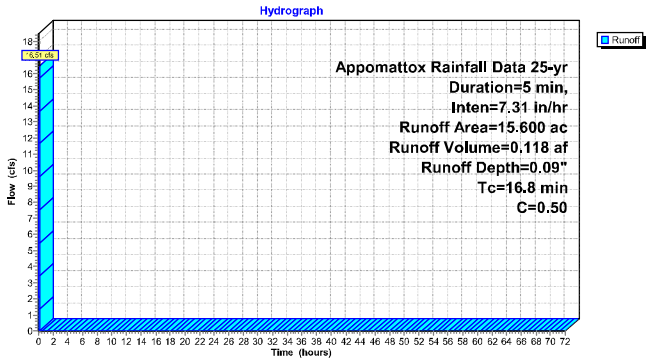
Runoff = 16.51 cfs @ 0.08 hrs, Volume= 0.118 af, Depth= 0.09"
Routed to Pond 19P : DA-15 SEDIMENT BASIN C

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Appomattox Rainfall Data 25-yr Duration=5 min, Inten=7.31 in/hr

Area (ac)	C	Description
15.600	0.50	
15.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8					Direct Entry,

Subcatchment 16S: PH I E&S DA-15



Summary for Pond 17P: DA-04 SEDIMENT BASIN A

Inflow Area = 16.530 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 18.96 cfs @ 0.08 hrs, Volume= 0.135 af
Outflow = 0.02 cfs @ 0.17 hrs, Volume= 0.066 af, Atten= 100%, Lag= 5.2 min
Primary = 0.02 cfs @ 0.17 hrs, Volume= 0.066 af
Routed to Link 20L : PH I E&S DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 20L : PH I E&S DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 711.10' @ 0.17 hrs Surf.Area= 56,957 sf Storage= 151,203 cf (5,879 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,766.3 min (1,771.3 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

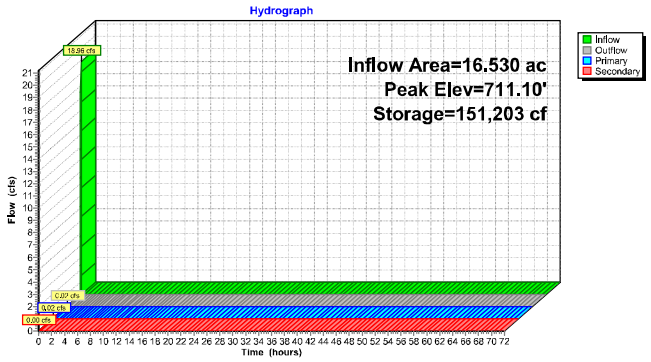
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.02 cfs @ 0.17 hrs HW=711.10' (Free Discharge)
└**1=CULVERT** (Passes 0.02 cfs of 35.05 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.02 cfs @ 1.06 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 17P: DA-04 SEDIMENT BASIN A



Stage-Discharge for Pond 17P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00	712.20	0.23	0.23	0.00
707.10	0.00	0.00	0.00	712.30	0.24	0.24	0.00
707.20	0.00	0.00	0.00	712.40	0.25	0.25	0.00
707.30	0.00	0.00	0.00	712.50	0.26	0.26	0.00
707.40	0.00	0.00	0.00	712.60	0.27	0.27	0.00
707.50	0.00	0.00	0.00	712.70	0.28	0.28	0.00
707.60	0.00	0.00	0.00	712.80	0.29	0.29	0.00
707.70	0.00	0.00	0.00	712.90	0.29	0.29	0.00
707.80	0.00	0.00	0.00	713.00	0.30	0.30	0.00
707.90	0.00	0.00	0.00	713.10	0.31	0.31	0.00
708.00	0.00	0.00	0.00	713.20	0.32	0.32	0.00
708.10	0.00	0.00	0.00	713.30	0.33	0.33	0.00
708.20	0.00	0.00	0.00	713.40	0.33	0.33	0.00
708.30	0.00	0.00	0.00	713.50	0.34	0.34	0.00
708.40	0.00	0.00	0.00	713.60	1.97	1.97	0.00
708.50	0.00	0.00	0.00	713.70	4.95	4.95	0.00
708.60	0.00	0.00	0.00	713.80	8.80	8.80	0.00
708.70	0.00	0.00	0.00	713.90	13.36	13.36	0.00
708.80	0.00	0.00	0.00	714.00	18.54	18.54	0.00
708.90	0.00	0.00	0.00	714.10	24.25	24.25	0.00
709.00	0.00	0.00	0.00	714.20	30.47	30.47	0.00
709.10	0.00	0.00	0.00	714.30	37.15	37.15	0.00
709.20	0.00	0.00	0.00	714.40	44.26	44.26	0.00
709.30	0.00	0.00	0.00	714.50	51.77	51.77	0.00
709.40	0.00	0.00	0.00	714.60	54.27	54.27	0.00
709.50	0.00	0.00	0.00	714.70	54.72	54.72	0.00
709.60	0.00	0.00	0.00	714.80	55.17	55.17	0.00
709.70	0.00	0.00	0.00	714.90	55.61	55.61	0.00
709.80	0.00	0.00	0.00	715.00	56.05	56.05	0.00
709.90	0.00	0.00	0.00	715.10	57.78	56.49	1.29
710.00	0.00	0.00	0.00	715.20	60.63	56.92	3.71
710.10	0.00	0.00	0.00	715.30	64.30	57.35	6.95
710.20	0.00	0.00	0.00	715.40	68.67	57.77	10.90
710.30	0.00	0.00	0.00	715.50	73.66	58.20	15.46
710.40	0.00	0.00	0.00	715.60	79.24	58.61	20.63
710.50	0.00	0.00	0.00	715.70	85.11	59.03	26.08
710.60	0.00	0.00	0.00	715.80	91.41	59.44	31.96
710.70	0.00	0.00	0.00	715.90	98.46	59.86	38.61
710.80	0.00	0.00	0.00	716.00	106.03	60.26	45.76
710.90	0.00	0.00	0.00	716.10	114.29	60.67	53.63
711.00	0.00	0.00	0.00	716.20	123.12	61.07	62.05
711.10	0.02	0.02	0.00	716.30	132.38	61.47	70.91
711.20	0.06	0.06	0.00	716.40	142.16	61.87	80.29
711.30	0.09	0.09	0.00	716.50	152.30	62.26	90.04
711.40	0.12	0.12	0.00	716.60	162.94	62.66	100.28
711.50	0.14	0.14	0.00	716.70	174.27	63.05	111.23
711.60	0.15	0.15	0.00	716.80	186.14	63.43	122.71
711.70	0.17	0.17	0.00	716.90	198.55	63.82	134.73
711.80	0.18	0.18	0.00	717.00	211.49	64.20	147.29
711.90	0.19	0.19	0.00	717.10	224.97	64.58	160.39
712.00	0.21	0.21	0.00	717.20	239.00	64.96	174.04
712.10	0.22	0.22	0.00	717.30	253.58	65.34	188.25

Stage-Discharge for Pond 17P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
717.40	268.71	65.71	203.00
717.50	284.40	66.08	218.32
717.60	300.64	66.45	234.19
717.70	317.45	66.82	250.63
717.80	334.83	67.19	267.64
717.90	352.77	67.55	285.22
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 17P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0	712.20	68,641	222,808
707.10	29,102	2,947	712.30	69,006	229,691
707.20	29,350	5,895	712.40	69,370	236,573
707.30	29,599	8,842	712.50	69,735	243,455
707.40	29,847	11,790	712.60	70,101	250,520
707.50	30,095	14,737	712.70	70,466	257,585
707.60	30,346	17,809	712.80	70,832	264,650
707.70	30,596	20,882	712.90	71,197	271,715
707.80	30,847	23,954	713.00	71,563	278,780
707.90	31,097	27,026	713.10	72,052	286,058
708.00	31,348	30,098	713.20	72,541	293,337
708.10	31,600	33,296	713.30	73,029	300,615
708.20	31,853	36,494	713.40	73,518	307,894
708.30	32,105	39,692	713.50	74,007	315,172
708.40	32,358	42,890	713.60	74,372	322,664
708.50	32,610	46,088	713.70	74,737	330,156
708.60	32,864	49,412	713.80	75,102	337,648
708.70	33,119	52,737	713.90	75,467	345,140
708.80	33,373	56,061	714.00	75,832	352,632
708.90	33,628	59,386	714.10	76,199	360,307
709.00	33,882	62,711	714.20	76,567	367,982
709.10	34,139	66,163	714.30	76,934	375,657
709.20	34,395	69,615	714.40	77,302	383,332
709.30	34,652	73,068	714.50	77,669	391,007
709.40	34,908	76,520	714.60	78,039	398,867
709.50	35,165	79,972	714.70	78,410	406,726
709.60	35,424	83,554	714.80	78,780	414,586
709.70	35,683	87,135	714.90	79,151	422,445
709.80	35,942	90,716	715.00	79,521	430,305
709.90	36,201	94,297	715.10	79,894	438,350
710.00	36,460	97,879	715.20	80,267	446,395
710.10	39,025	102,166	715.30	80,639	454,441
710.20	41,591	106,453	715.40	81,012	462,486
710.30	44,156	110,741	715.50	81,385	470,531
710.40	46,722	115,028	715.60	81,761	478,764
710.50	49,287	119,315	715.70	82,136	486,996
710.60	50,379	124,517	715.80	82,512	495,228
710.70	51,471	129,719	715.90	82,887	503,461
710.80	52,562	134,920	716.00	83,263	511,693
710.90	53,654	140,122	716.10	83,641	520,114
711.00	54,746	145,324	716.20	84,019	528,535
711.10	57,019	151,366	716.30	84,398	536,956
711.20	59,292	157,409	716.40	84,776	545,377
711.30	61,565	163,452	716.50	85,154	553,798
711.40	63,838	169,495	716.60	85,535	562,408
711.50	66,111	175,538	716.70	85,916	571,019
711.60	66,471	182,239	716.80	86,296	579,629
711.70	66,831	188,940	716.90	86,677	588,240
711.80	67,192	195,641	717.00	87,058	596,851
711.90	67,552	202,342	717.10	88,443	605,903
712.00	67,912	209,044	717.20	89,829	614,955
712.10	68,277	215,926	717.30	91,214	624,007

Stage-Area-Storage for Pond 17P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
717.40	92,600	633,059
717.50	93,985	642,111
717.60	95,403	651,864
717.70	96,821	661,617
717.80	98,239	671,370
717.90	99,657	681,123
718.00	**101,075**	**690,876**

Summary for Pond 18P: DA-06 SEDIMENT BASIN B

Inflow Area = 7.380 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 8.58 cfs @ 0.08 hrs, Volume= 0.061 af
Outflow = 0.01 cfs @ 0.17 hrs, Volume= 0.046 af, Atten= 100%, Lag= 5.2 min
Primary = 0.01 cfs @ 0.17 hrs, Volume= 0.046 af
Routed to Link 21L : PH I E&S DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 21L : PH I E&S DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 805.22' @ 0.17 hrs Surf.Area= 11,645 sf Storage= 16,461 cf (2,657 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,657.8 min (1,662.8 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

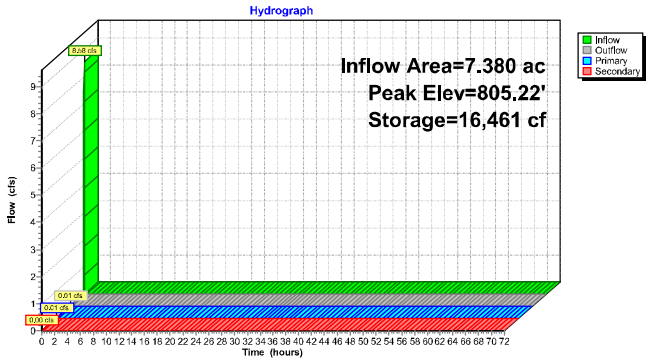
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.01 cfs @ 0.17 hrs HW=805.22' (Free Discharge)
└**1=CULVERT** (Passes 0.01 cfs of 50.81 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.01 cfs @ 2.03 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 18P: DA-06 SEDIMENT BASIN B



Stage-Discharge for Pond 18P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00	807.20	0.05	0.05	0.00
802.10	0.00	0.00	0.00	807.30	0.05	0.05	0.00
802.20	0.00	0.00	0.00	807.40	0.05	0.05	0.00
802.30	0.00	0.00	0.00	807.50	0.05	0.05	0.00
802.40	0.00	0.00	0.00	807.60	1.68	1.68	0.00
802.50	0.00	0.00	0.00	807.70	4.65	4.65	0.00
802.60	0.00	0.00	0.00	807.80	8.49	8.49	0.00
802.70	0.00	0.00	0.00	807.90	13.05	13.05	0.00
802.80	0.00	0.00	0.00	808.00	18.21	18.21	0.00
802.90	0.00	0.00	0.00	808.10	23.93	23.93	0.00
803.00	0.00	0.00	0.00	808.20	30.14	30.14	0.00
803.10	0.00	0.00	0.00	808.30	36.81	36.81	0.00
803.20	0.00	0.00	0.00	808.40	43.91	43.91	0.00
803.30	0.00	0.00	0.00	808.50	51.42	51.42	0.00
803.40	0.00	0.00	0.00	808.60	57.92	57.92	0.00
803.50	0.00	0.00	0.00	808.70	59.32	58.11	1.21
803.60	0.00	0.00	0.00	808.80	61.78	58.31	3.47
803.70	0.00	0.00	0.00	808.90	65.01	58.51	6.51
803.80	0.00	0.00	0.00	809.00	68.92	58.70	10.22
803.90	0.00	0.00	0.00	809.10	73.41	58.90	14.51
804.00	0.00	0.00	0.00	809.20	78.47	59.09	19.37
804.10	0.00	0.00	0.00	809.30	83.80	59.28	24.52
804.20	0.00	0.00	0.00	809.40	89.55	59.48	30.07
804.30	0.00	0.00	0.00	809.50	96.03	59.67	36.36
804.40	0.00	0.00	0.00	809.60	102.99	59.86	43.13
804.50	0.00	0.00	0.00	809.70	110.64	60.05	50.59
804.60	0.00	0.00	0.00	809.80	118.82	60.24	58.58
804.70	0.00	0.00	0.00	809.90	127.42	60.43	66.99
804.80	0.00	0.00	0.00	810.00	**136.54**	**60.62**	**75.92**
804.90	0.00	0.00	0.00				
805.00	0.00	0.00	0.00				
805.10	0.01	0.01	0.00				
805.20	0.01	0.01	0.00				
805.30	0.02	0.02	0.00				
805.40	0.02	0.02	0.00				
805.50	0.02	0.02	0.00				
805.60	0.02	0.02	0.00				
805.70	0.03	0.03	0.00				
805.80	0.03	0.03	0.00				
805.90	0.03	0.03	0.00				
806.00	0.03	0.03	0.00				
806.10	0.03	0.03	0.00				
806.20	0.03	0.03	0.00				
806.30	0.04	0.04	0.00				
806.40	0.04	0.04	0.00				
806.50	0.04	0.04	0.00				
806.60	0.04	0.04	0.00				
806.70	0.04	0.04	0.00				
806.80	0.04	0.04	0.00				
806.90	0.04	0.04	0.00				
807.00	0.04	0.04	0.00				
807.10	0.05	0.05	0.00				

Stage-Area-Storage for Pond 18P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0	807.20	17,040	46,253
802.10	2,467	264	807.30	17,269	47,969
802.20	2,580	527	807.40	17,499	49,684
802.30	2,692	791	807.50	17,729	51,400
802.40	2,805	1,054	807.60	17,892	53,213
802.50	2,917	1,318	807.70	18,055	55,027
802.60	2,998	1,630	807.80	18,219	56,841
802.70	3,079	1,942	807.90	18,382	58,654
802.80	3,161	2,254	808.00	18,545	60,468
802.90	3,242	2,566	808.10	18,710	62,364
803.00	3,323	2,878	808.20	18,876	64,260
803.10	3,406	3,231	808.30	19,041	66,156
803.20	3,490	3,584	808.40	19,207	68,051
803.30	3,573	3,937	808.50	19,372	69,947
803.40	3,657	4,291	808.60	19,540	71,926
803.50	3,740	4,644	808.70	19,708	73,906
803.60	3,825	5,039	808.80	19,876	75,885
803.70	3,911	5,434	808.90	20,044	77,864
803.80	3,996	5,830	809.00	20,212	79,843
803.90	4,082	6,225	809.10	20,384	81,907
804.00	4,167	6,621	809.20	20,556	83,972
804.10	4,832	7,204	809.30	20,728	86,036
804.20	5,498	7,787	809.40	20,900	88,100
804.30	6,163	8,370	809.50	21,072	90,164
804.40	6,829	8,953	809.60	23,102	92,779
804.50	7,494	9,536	809.70	25,133	95,394
804.60	7,911	10,389	809.80	27,163	98,009
804.70	8,327	11,243	809.90	29,194	100,623
804.80	8,744	12,096	810.00	**31,224**	**103,238**
804.90	9,160	12,950			
805.00	9,577	13,804			
805.10	10,502	14,993			
805.20	11,427	16,182			
805.30	12,353	17,370			
805.40	13,278	18,559			
805.50	14,203	19,749			
805.60	14,359	21,208			
805.70	14,515	22,667			
805.80	14,670	24,126			
805.90	14,826	25,585			
806.00	14,982	27,045			
806.10	15,140	28,583			
806.20	15,299	30,120			
806.30	15,457	31,658			
806.40	15,616	33,196			
806.50	15,774	34,734			
806.60	15,935	36,351			
806.70	16,096	37,969			
806.80	16,258	39,587			
806.90	16,419	41,205			
807.00	16,580	42,822			
807.10	16,810	44,538			

Summary for Pond 19P: DA-15 SEDIMENT BASIN C

Inflow Area = 15.600 ac, 0.00% Impervious, Inflow Depth = 0.09" for 25-yr event
Inflow = 16.51 cfs @ 0.08 hrs, Volume= 0.118 af
Outflow = 0.05 cfs @ 0.17 hrs, Volume= 0.089 af, Atten= 100%, Lag= 5.2 min
Primary = 0.05 cfs @ 0.17 hrs, Volume= 0.089 af
Routed to Link 22L : PH I E&S DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 22L : PH I E&S DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 764.16' @ 0.17 hrs Surf.Area= 31,180 sf Storage= 77,173 cf (5,112 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,376.3 min (1,381.3 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

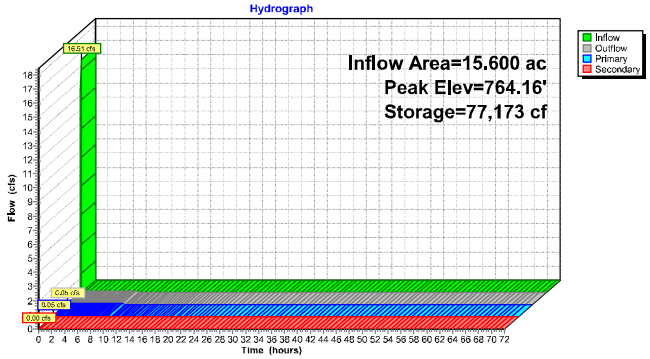
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**3.0" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.04 cfs @ 0.17 hrs HW=764.16' (Free Discharge)
└**1=CULVERT** (Passes 0.04 cfs of 38.44 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.04 cfs @ 1.35 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 19P: DA-15 SEDIMENT BASIN C



Stage-Discharge for Pond 19P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00	765.20	0.25	0.25	0.00
760.10	0.00	0.00	0.00	765.30	0.26	0.26	0.00
760.20	0.00	0.00	0.00	765.40	0.27	0.27	0.00
760.30	0.00	0.00	0.00	765.50	0.28	0.28	0.00
760.40	0.00	0.00	0.00	765.60	0.29	0.29	0.00
760.50	0.00	0.00	0.00	765.70	0.30	0.30	0.00
760.60	0.00	0.00	0.00	765.80	0.31	0.31	0.00
760.70	0.00	0.00	0.00	765.90	0.31	0.31	0.00
760.80	0.00	0.00	0.00	766.00	0.32	0.32	0.00
760.90	0.00	0.00	0.00	766.10	0.33	0.33	0.00
761.00	0.00	0.00	0.00	766.20	0.34	0.34	0.00
761.10	0.00	0.00	0.00	766.30	0.35	0.35	0.00
761.20	0.00	0.00	0.00	766.40	0.36	0.36	0.00
761.30	0.00	0.00	0.00	766.50	0.36	0.36	0.00
761.40	0.00	0.00	0.00	766.60	0.37	0.37	0.00
761.50	0.00	0.00	0.00	766.70	0.38	0.38	0.00
761.60	0.00	0.00	0.00	766.80	0.39	0.39	0.00
761.70	0.00	0.00	0.00	766.90	0.39	0.39	0.00
761.80	0.00	0.00	0.00	767.00	0.40	0.40	0.00
761.90	0.00	0.00	0.00	767.10	0.41	0.41	0.00
762.00	0.00	0.00	0.00	767.20	0.41	0.41	0.00
762.10	0.00	0.00	0.00	767.30	0.42	0.42	0.00
762.20	0.00	0.00	0.00	767.40	0.43	0.43	0.00
762.30	0.00	0.00	0.00	767.50	0.43	0.43	0.00
762.40	0.00	0.00	0.00	767.60	0.44	0.44	0.00
762.50	0.00	0.00	0.00	767.70	2.07	2.07	0.00
762.60	0.00	0.00	0.00	767.80	5.05	5.05	0.00
762.70	0.00	0.00	0.00	767.90	8.90	8.90	0.00
762.80	0.00	0.00	0.00	768.00	13.46	13.46	0.00
762.90	0.00	0.00	0.00	768.10	18.63	18.63	0.00
763.00	0.00	0.00	0.00	768.20	24.35	24.35	0.00
763.10	0.00	0.00	0.00	768.30	30.57	30.57	0.00
763.20	0.00	0.00	0.00	768.40	37.24	37.24	0.00
763.30	0.00	0.00	0.00	768.50	44.35	44.35	0.00
763.40	0.00	0.00	0.00	768.60	51.87	51.87	0.00
763.50	0.00	0.00	0.00	768.70	56.61	56.61	0.00
763.60	0.00	0.00	0.00	768.80	56.94	56.94	0.00
763.70	0.00	0.00	0.00	768.90	57.27	57.27	0.00
763.80	0.00	0.00	0.00	769.00	57.60	57.60	0.00
763.90	0.00	0.00	0.00	769.10	57.93	57.93	0.00
764.00	0.00	0.00	0.00	769.20	58.26	58.26	0.00
764.10	0.02	0.02	0.00	769.30	58.59	58.59	0.00
764.20	0.06	0.06	0.00	769.40	59.63	58.91	0.72
764.30	0.10	0.10	0.00	769.50	63.02	59.23	3.79
764.40	0.12	0.12	0.00	769.60	67.81	59.55	8.26
764.50	0.14	0.14	0.00	769.70	73.73	59.87	13.86
764.60	0.16	0.16	0.00	769.80	80.63	60.19	20.44
764.70	0.18	0.18	0.00	769.90	88.39	60.50	27.89
764.80	0.19	0.19	0.00	770.00	96.78	60.81	35.96
764.90	0.21	0.21	0.00	770.10	105.62	61.13	44.49
765.00	0.22	0.22	0.00	770.20	115.26	61.44	53.82
765.10	0.23	0.23	0.00	770.30	125.80	61.74	64.06

Stage-Discharge for Pond 19P: DA-15 SEDIMENT BASIN C (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
770.40	137.17	62.05	75.11
770.50	149.40	62.36	87.04
770.60	162.28	62.66	99.62
770.70	175.76	62.96	112.80
770.80	189.81	63.26	126.55
770.90	204.38	63.56	140.82
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 19P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	765.20	37,758	114,150
760.10	14,188	1,454	765.30	38,077	117,941
760.20	14,426	2,909	765.40	38,397	121,733
760.30	14,663	4,363	765.50	38,717	125,525
760.40	14,901	5,818	765.60	38,945	129,453
760.50	15,139	7,272	765.70	39,172	133,382
760.60	15,276	8,821	765.80	39,400	137,311
760.70	15,414	10,369	765.90	39,627	141,239
760.80	15,551	11,917	766.00	39,855	145,168
760.90	15,689	13,465	766.10	40,085	149,211
761.00	15,826	15,014	766.20	40,316	153,254
761.10	15,966	16,631	766.30	40,546	157,297
761.20	16,105	18,249	766.40	40,777	161,340
761.30	16,245	19,866	766.50	41,007	165,383
761.40	16,384	21,483	766.60	41,240	169,542
761.50	16,524	23,101	766.70	41,473	173,701
761.60	16,666	24,789	766.80	41,707	177,860
761.70	16,808	26,477	766.90	41,940	182,019
761.80	16,949	28,165	767.00	42,173	186,178
761.90	17,091	29,852	767.10	42,409	190,455
762.00	17,233	31,540	767.20	42,645	194,731
762.10	17,377	33,300	767.30	42,880	199,007
762.20	17,521	35,059	767.40	43,116	203,283
762.30	17,664	36,818	767.50	43,352	207,560
762.40	17,808	38,577	767.60	43,591	211,954
762.50	17,952	40,337	767.70	43,829	216,349
762.60	18,096	42,168	767.80	44,068	220,744
762.70	18,244	44,000	767.90	44,306	225,139
762.80	18,390	45,832	768.00	44,545	229,534
762.90	18,536	47,663	768.10	44,786	234,049
763.00	18,682	49,495	768.20	45,028	238,563
763.10	19,206	51,494	768.30	45,269	243,078
763.20	19,729	53,493	768.40	45,511	247,593
763.30	20,253	55,492	768.50	45,752	252,108
763.40	20,776	57,491	768.60	45,996	256,744
763.50	21,300	59,491	768.70	46,240	261,380
763.60	22,837	62,005	768.80	46,484	266,017
763.70	24,374	64,519	768.90	46,728	270,653
763.80	25,910	67,033	769.00	46,972	275,289
763.90	27,447	69,547	769.10	47,219	280,048
764.00	28,984	72,062	769.20	47,466	284,807
764.10	30,379	75,309	769.30	47,712	289,566
764.20	31,774	78,556	769.40	47,959	294,325
764.30	33,168	81,803	769.50	48,206	299,084
764.40	34,563	85,050	769.60	48,455	303,966
764.50	35,958	88,297	769.70	48,705	308,849
764.60	36,190	91,951	769.80	48,954	313,732
764.70	36,422	95,605	769.90	49,204	318,615
764.80	36,654	99,258	770.00	49,453	323,498
764.90	36,886	102,912	770.10	49,706	328,507
765.00	37,118	106,566	770.20	49,960	333,516
765.10	37,438	110,358	770.30	50,213	338,524

Stage-Area-Storage for Pond 19P: DA-15 SEDIMENT BASIN C (continued)

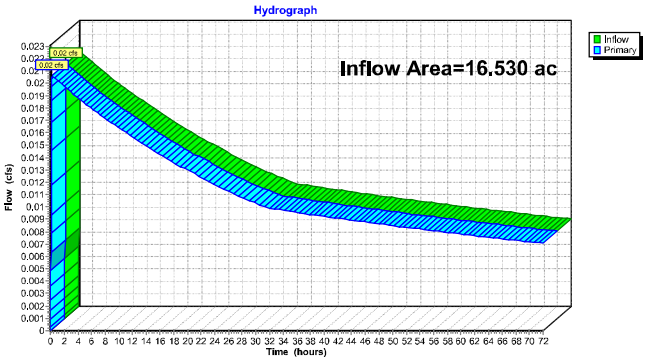
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
770.40	50,467	343,533
770.50	50,720	348,542
770.60	52,330	354,016
770.70	53,940	359,491
770.80	55,550	364,965
770.90	57,160	370,439
771.00	**58,770**	**375,914**

Summary for Link 20L: PH I E&S DA-04 (POST ROUTING)

Inflow Area = 16.530 ac, 0.00% Impervious, Inflow Depth > 0.05" for 25-yr event
Inflow = 0.02 cfs @ 0.17 hrs, Volume= 0.066 af
Primary = 0.02 cfs @ 0.17 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 20L: PH I E&S DA-04 (POST ROUTING)

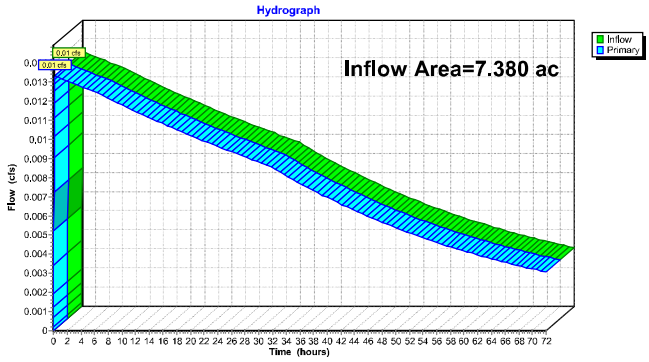


Summary for Link 21L: PH I E&S DA-06 (POST ROUTING)

Inflow Area = 7.380 ac, 0.00% Impervious, Inflow Depth > 0.08" for 25-yr event
Inflow = 0.01 cfs @ 0.17 hrs, Volume= 0.046 af
Primary = 0.01 cfs @ 0.17 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 21L: PH I E&S DA-06 (POST ROUTING)

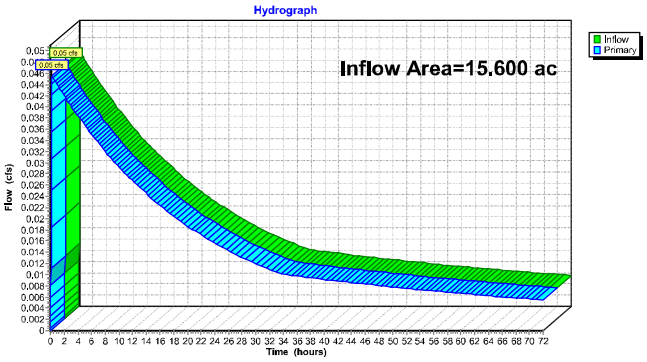


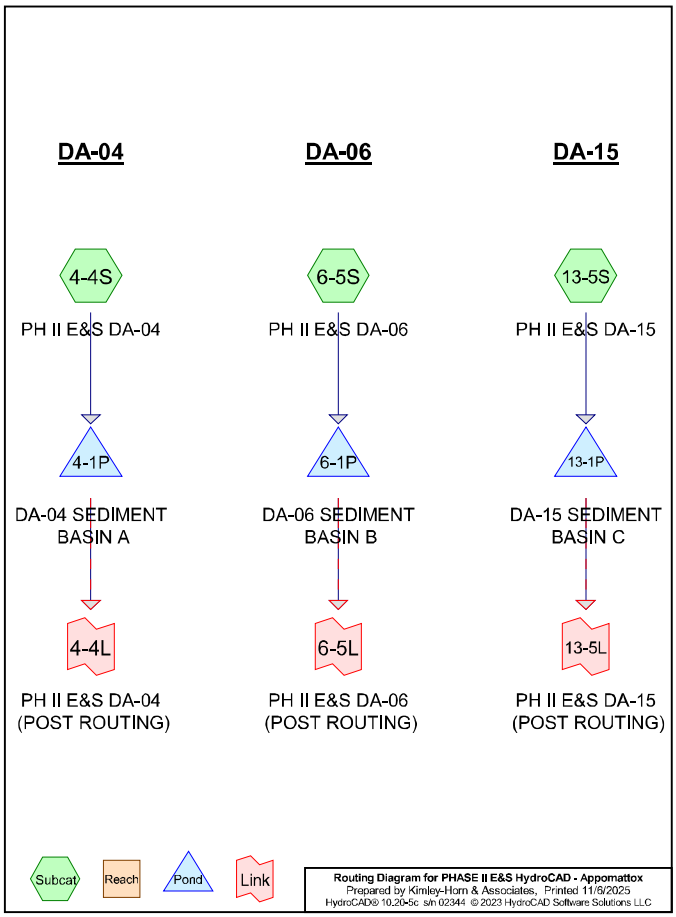
Summary for Link 22L: PH I E&S DA-15 (POST ROUTING)

Inflow Area = 15.600 ac, 0.00% Impervious, Inflow Depth > 0.07" for 25-yr event
Inflow = 0.05 cfs @ 0.17 hrs, Volume= 0.089 af
Primary = 0.05 cfs @ 0.17 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 22L: PH I E&S DA-15 (POST ROUTING)





Summary for Subcatchment 4-4S: PH II E&S DA-04

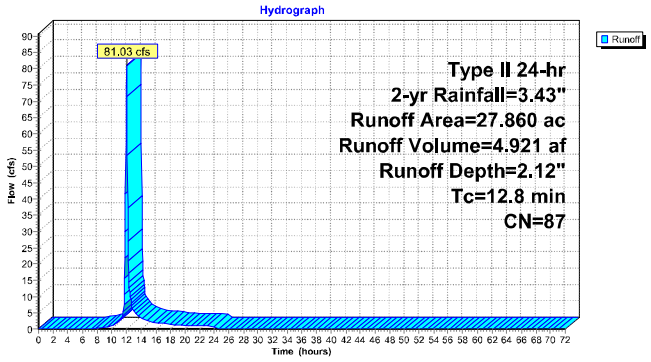
Runoff = 81.03 cfs @ 12.05 hrs, Volume= 4.921 af, Depth= 2.12"
Routed to Pond 4-1P : DA-04 SEDIMENT BASIN A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	27.090	87	
*	0.770	75	
	27.860	87	Weighted Average
	27.860		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8					Direct Entry,

Subcatchment 4-4S: PH II E&S DA-04



Summary for Subcatchment 6-5S: PH II E&S DA-06

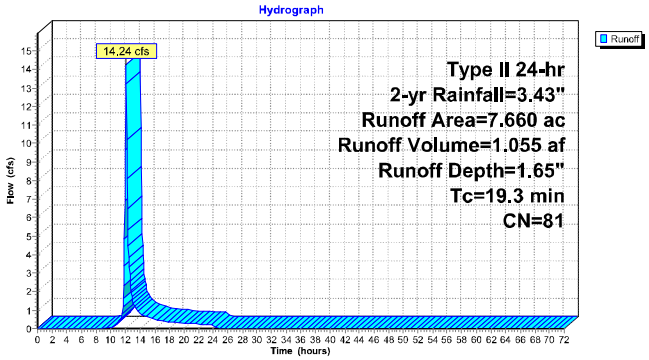
Runoff = 14.24 cfs @ 12.12 hrs, Volume= 1.055 af, Depth= 1.65"
Routed to Pond 6-1P : DA-06 SEDIMENT BASIN B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	7.660	81	
	7.660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3					Direct Entry,

Subcatchment 6-5S: PH II E&S DA-06



Summary for Subcatchment 13-5S: PH II E&S DA-15

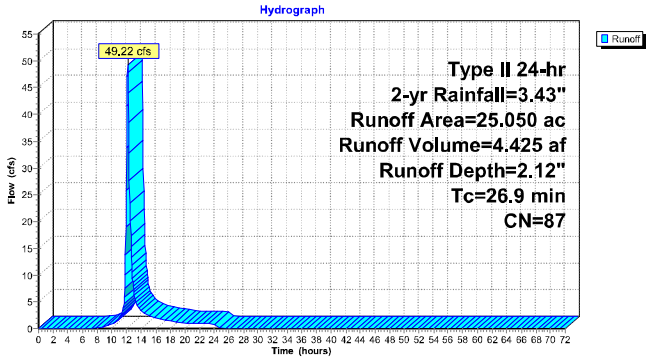
Runoff = 49.22 cfs @ 12.20 hrs, Volume= 4.425 af, Depth= 2.12"
Routed to Pond 13-1P : DA-15 SEDIMENT BASIN C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	25.050	87	
	25.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9					Direct Entry,

Subcatchment 13-5S: PH II E&S DA-15



Summary for Pond 4-1P: DA-04 SEDIMENT BASIN A

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth = 2.12" for 2-yr event
Inflow = 81.03 cfs @ 12.05 hrs, Volume= 4.921 af
Outflow = 1.50 cfs @ 18.36 hrs, Volume= 2.221 af, Atten= 98%, Lag= 378.8 min
Primary = 1.50 cfs @ 18.36 hrs, Volume= 2.221 af
Routed to Link 4-4L : PH II E&S DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4-4L : PH II E&S DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 713.57' @ 18.36 hrs Surf.Area= 74,266 sf Storage= 320,483 cf (175,160 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,280.1 min (2,099.3 - 819.2)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

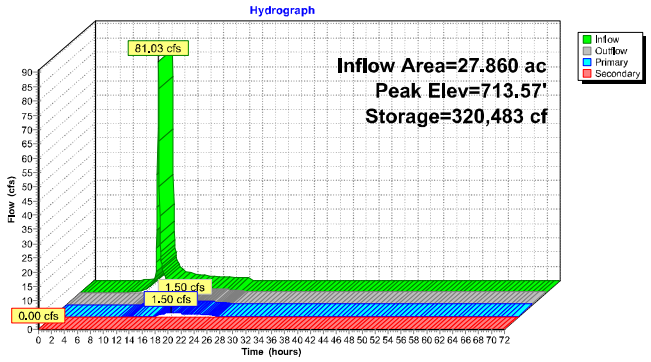
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads

#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.32 cfs @ 18.36 hrs HW=713.57' (Free Discharge)
└1=**CULVERT** (Passes 1.32 cfs of 49.41 cfs potential flow)
└2=**1-YR CONTROL** (Orifice Controls 0.35 cfs @ 7.54 fps)
└3=**TOP OF RISER** (Weir Controls 0.97 cfs @ 0.87 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└4=**EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 4-1P: DA-04 SEDIMENT BASIN A



Stage-Discharge for Pond 4-1P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00	712.40	0.25	0.25	0.00
707.10	0.00	0.00	0.00	712.50	0.26	0.26	0.00
707.20	0.00	0.00	0.00	712.60	0.27	0.27	0.00
707.30	0.00	0.00	0.00	712.70	0.28	0.28	0.00
707.40	0.00	0.00	0.00	712.80	0.29	0.29	0.00
707.50	0.00	0.00	0.00	712.90	0.29	0.29	0.00
707.60	0.00	0.00	0.00	713.00	0.30	0.30	0.00
707.70	0.00	0.00	0.00	713.10	0.31	0.31	0.00
707.80	0.00	0.00	0.00	713.20	0.32	0.32	0.00
707.90	0.00	0.00	0.00	713.30	0.33	0.33	0.00
708.00	0.00	0.00	0.00	713.40	0.33	0.33	0.00
708.10	0.00	0.00	0.00	713.50	0.34	0.34	0.00
708.20	0.00	0.00	0.00	713.60	1.97	1.97	0.00
708.30	0.00	0.00	0.00	713.70	4.95	4.95	0.00
708.40	0.00	0.00	0.00	713.80	8.80	8.80	0.00
708.50	0.00	0.00	0.00	713.90	13.36	13.36	0.00
708.60	0.00	0.00	0.00	714.00	18.54	18.54	0.00
708.70	0.00	0.00	0.00	714.10	24.25	24.25	0.00
708.80	0.00	0.00	0.00	714.20	30.47	30.47	0.00
708.90	0.00	0.00	0.00	714.30	37.15	37.15	0.00
709.00	0.00	0.00	0.00	714.40	44.26	44.26	0.00
709.10	0.00	0.00	0.00	714.50	51.77	51.77	0.00
709.20	0.00	0.00	0.00	714.60	54.27	54.27	0.00
709.30	0.00	0.00	0.00	714.70	54.72	54.72	0.00
709.40	0.00	0.00	0.00	714.80	55.17	55.17	0.00
709.50	0.00	0.00	0.00	714.90	55.61	55.61	0.00
709.60	0.00	0.00	0.00	715.00	56.05	56.05	0.00
709.70	0.00	0.00	0.00	715.10	57.78	56.49	1.29
709.80	0.00	0.00	0.00	715.20	60.63	56.92	3.71
709.90	0.00	0.00	0.00	715.30	64.30	57.35	6.95
710.00	0.00	0.00	0.00	715.40	68.67	57.77	10.90
710.10	0.00	0.00	0.00	715.50	73.66	58.20	15.46
710.20	0.00	0.00	0.00	715.60	79.24	58.61	20.63
710.30	0.00	0.00	0.00	715.70	85.11	59.03	26.08
710.40	0.00	0.00	0.00	715.80	91.41	59.44	31.96
710.50	0.00	0.00	0.00	715.90	98.46	59.86	38.61
710.60	0.00	0.00	0.00	716.00	106.03	60.26	45.76
710.70	0.00	0.00	0.00	716.10	114.29	60.67	53.63
710.80	0.00	0.00	0.00	716.20	123.12	61.07	62.05
710.90	0.00	0.00	0.00	716.30	132.38	61.47	70.91
711.00	0.00	0.00	0.00	716.40	142.16	61.87	80.29
711.10	0.02	0.02	0.00	716.50	152.30	62.26	90.04
711.20	0.06	0.06	0.00	716.60	162.94	62.66	100.28
711.30	0.09	0.09	0.00	716.70	174.27	63.05	111.23
711.40	0.12	0.12	0.00	716.80	186.14	63.43	122.71
711.50	0.14	0.14	0.00	716.90	198.55	63.82	134.73
711.60	0.15	0.15	0.00	717.00	211.49	64.20	147.29
711.70	0.17	0.17	0.00	717.10	224.97	64.58	160.39
711.80	0.18	0.18	0.00	717.20	239.00	64.96	174.04
711.90	0.19	0.19	0.00	717.30	253.58	65.34	188.25
712.00	0.21	0.21	0.00	717.40	268.71	65.71	203.00
712.10	0.22	0.22	0.00	717.50	284.40	66.08	218.32
712.20	0.23	0.23	0.00	717.60	300.64	66.45	234.19
712.30	0.24	0.24	0.00	717.70	317.45	66.82	250.63

Stage-Discharge for Pond 4-1P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
717.80	334.83	67.19	267.64
717.90	352.77	67.55	285.22
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 4-1P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0	712.40	69,370	236,573
707.10	29,102	2,947	712.50	69,735	243,455
707.20	29,350	5,895	712.60	70,101	250,520
707.30	29,599	8,842	712.70	70,466	257,585
707.40	29,847	11,790	712.80	70,832	264,650
707.50	30,095	14,737	712.90	71,197	271,715
707.60	30,346	17,809	713.00	71,563	278,780
707.70	30,596	20,882	713.10	72,052	286,058
707.80	30,847	23,954	713.20	72,541	293,337
707.90	31,097	27,026	713.30	73,029	300,615
708.00	31,348	30,098	713.40	73,518	307,894
708.10	31,600	33,296	713.50	74,007	315,172
708.20	31,853	36,494	713.60	74,372	322,664
708.30	32,105	39,692	713.70	74,737	330,156
708.40	32,358	42,890	713.80	75,102	337,648
708.50	32,610	46,088	713.90	75,467	345,140
708.60	32,864	49,412	714.00	75,832	352,632
708.70	33,119	52,737	714.10	76,199	360,307
708.80	33,373	56,061	714.20	76,567	367,982
708.90	33,628	59,386	714.30	76,934	375,657
709.00	33,882	62,711	714.40	77,302	383,332
709.10	34,139	66,163	714.50	77,669	391,007
709.20	34,395	69,615	714.60	78,039	398,867
709.30	34,652	73,068	714.70	78,410	406,726
709.40	34,908	76,520	714.80	78,780	414,586
709.50	35,165	79,972	714.90	79,151	422,445
709.60	35,424	83,554	715.00	79,521	430,305
709.70	35,683	87,135	715.10	79,894	438,350
709.80	35,942	90,716	715.20	80,267	446,395
709.90	36,201	94,297	715.30	80,639	454,441
710.00	36,460	97,879	715.40	81,012	462,486
710.10	39,025	102,166	715.50	81,385	470,531
710.20	41,591	106,453	715.60	81,761	478,764
710.30	44,156	110,741	715.70	82,136	486,996
710.40	46,722	115,028	715.80	82,512	495,228
710.50	49,287	119,315	715.90	82,887	503,461
710.60	50,379	124,517	716.00	83,263	511,693
710.70	51,471	129,719	716.10	83,641	520,114
710.80	52,562	134,920	716.20	84,019	528,535
710.90	53,654	140,122	716.30	84,398	536,956
711.00	54,746	145,324	716.40	84,776	545,377
711.10	57,019	151,366	716.50	85,154	553,798
711.20	59,292	157,409	716.60	85,535	562,408
711.30	61,565	163,452	716.70	85,916	571,019
711.40	63,838	169,495	716.80	86,296	579,629
711.50	66,111	175,538	716.90	86,677	588,240
711.60	66,471	182,239	717.00	87,058	596,851
711.70	66,831	188,940	717.10	88,443	605,903
711.80	67,192	195,641	717.20	89,829	614,955
711.90	67,552	202,342	717.30	91,214	624,007
712.00	67,912	209,044	717.40	92,600	633,059
712.10	68,277	215,926	717.50	93,985	642,111
712.20	68,641	222,808	717.60	95,403	651,864
712.30	69,006	229,691	717.70	96,821	661,617

Stage-Area-Storage for Pond 4-1P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
717.80	98,239	671,370
717.90	99,657	681,123
718.00	**101,075**	**690,876**

Summary for Pond 6-1P: DA-06 SEDIMENT BASIN B

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth = 1.65" for 2-yr event
Inflow = 14.24 cfs @ 12.12 hrs, Volume= 1.055 af
Outflow = 0.37 cfs @ 18.41 hrs, Volume= 0.374 af, Atten= 97%, Lag= 377.4 min
Primary = 0.37 cfs @ 18.41 hrs, Volume= 0.374 af
Routed to Link 6-5L : PH II E&S DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 6-5L : PH II E&S DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 807.53' @ 18.41 hrs Surf.Area= 17,777 sf Storage= 51,932 cf (38,128 cf above start)

Plug-Flow detention time= 3,195.6 min calculated for 0.057 af (5% of inflow)
Center-of-Mass det. time= 1,188.5 min (2,033.7 - 845.2)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

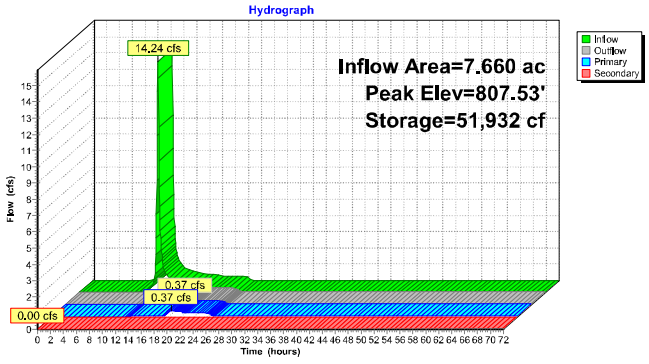
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.31 cfs @ 18.41 hrs HW=807.53' (Free Discharge)
└**1=CULVERT** (Passes 0.31 cfs of 55.76 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.05 cfs @ 7.59 fps)
└**3=TOP OF RISER** (Weir Controls 0.26 cfs @ 0.56 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 6-1P: DA-06 SEDIMENT BASIN B



Stage-Discharge for Pond 6-1P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00	807.40	0.05	0.05	0.00
802.10	0.00	0.00	0.00	807.50	0.05	0.05	0.00
802.20	0.00	0.00	0.00	807.60	1.68	1.68	0.00
802.30	0.00	0.00	0.00	807.70	4.65	4.65	0.00
802.40	0.00	0.00	0.00	807.80	8.49	8.49	0.00
802.50	0.00	0.00	0.00	807.90	13.05	13.05	0.00
802.60	0.00	0.00	0.00	808.00	18.21	18.21	0.00
802.70	0.00	0.00	0.00	808.10	23.93	23.93	0.00
802.80	0.00	0.00	0.00	808.20	30.14	30.14	0.00
802.90	0.00	0.00	0.00	808.30	36.81	36.81	0.00
803.00	0.00	0.00	0.00	808.40	43.91	43.91	0.00
803.10	0.00	0.00	0.00	808.50	51.42	51.42	0.00
803.20	0.00	0.00	0.00	808.60	57.92	57.92	0.00
803.30	0.00	0.00	0.00	808.70	59.32	58.11	1.21
803.40	0.00	0.00	0.00	808.80	61.78	58.31	3.47
803.50	0.00	0.00	0.00	808.90	65.01	58.51	6.51
803.60	0.00	0.00	0.00	809.00	68.92	58.70	10.22
803.70	0.00	0.00	0.00	809.10	73.41	58.90	14.51
803.80	0.00	0.00	0.00	809.20	78.47	59.09	19.37
803.90	0.00	0.00	0.00	809.30	83.80	59.28	24.52
804.00	0.00	0.00	0.00	809.40	89.55	59.48	30.07
804.10	0.00	0.00	0.00	809.50	96.03	59.67	36.36
804.20	0.00	0.00	0.00	809.60	102.99	59.86	43.13
804.30	0.00	0.00	0.00	809.70	110.64	60.05	50.59
804.40	0.00	0.00	0.00	809.80	118.82	60.24	58.58
804.50	0.00	0.00	0.00	809.90	127.42	60.43	66.99
804.60	0.00	0.00	0.00	810.00	**136.54**	**60.62**	**75.92**
804.70	0.00	0.00	0.00				
804.80	0.00	0.00	0.00				
804.90	0.00	0.00	0.00				
805.00	0.00	0.00	0.00				
805.10	0.01	0.01	0.00				
805.20	0.01	0.01	0.00				
805.30	0.02	0.02	0.00				
805.40	0.02	0.02	0.00				
805.50	0.02	0.02	0.00				
805.60	0.02	0.02	0.00				
805.70	0.03	0.03	0.00				
805.80	0.03	0.03	0.00				
805.90	0.03	0.03	0.00				
806.00	0.03	0.03	0.00				
806.10	0.03	0.03	0.00				
806.20	0.03	0.03	0.00				
806.30	0.04	0.04	0.00				
806.40	0.04	0.04	0.00				
806.50	0.04	0.04	0.00				
806.60	0.04	0.04	0.00				
806.70	0.04	0.04	0.00				
806.80	0.04	0.04	0.00				
806.90	0.04	0.04	0.00				
807.00	0.04	0.04	0.00				
807.10	0.05	0.05	0.00				
807.20	0.05	0.05	0.00				
807.30	0.05	0.05	0.00				

Stage-Area-Storage for Pond 6-1P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0	807.40	17,499	49,684
802.10	2,467	264	807.50	17,729	51,400
802.20	2,580	527	807.60	17,892	53,213
802.30	2,692	791	807.70	18,055	55,027
802.40	2,805	1,054	807.80	18,219	56,841
802.50	2,917	1,318	807.90	18,382	58,654
802.60	2,998	1,630	808.00	18,545	60,468
802.70	3,079	1,942	808.10	18,710	62,364
802.80	3,161	2,254	808.20	18,876	64,260
802.90	3,242	2,566	808.30	19,041	66,156
803.00	3,323	2,878	808.40	19,207	68,051
803.10	3,406	3,231	808.50	19,372	69,947
803.20	3,490	3,584	808.60	19,540	71,926
803.30	3,573	3,937	808.70	19,708	73,906
803.40	3,657	4,291	808.80	19,876	75,885
803.50	3,740	4,644	808.90	20,044	77,864
803.60	3,825	5,039	809.00	20,212	79,843
803.70	3,911	5,434	809.10	20,384	81,907
803.80	3,996	5,830	809.20	20,556	83,972
803.90	4,082	6,225	809.30	20,728	86,036
804.00	4,167	6,621	809.40	20,900	88,100
804.10	4,832	7,204	809.50	21,072	90,164
804.20	5,498	7,787	809.60	23,102	92,779
804.30	6,163	8,370	809.70	25,133	95,394
804.40	6,829	8,953	809.80	27,163	98,009
804.50	7,494	9,536	809.90	29,194	100,623
804.60	7,911	10,389	810.00	**31,224**	**103,238**
804.70	8,327	11,243			
804.80	8,744	12,096			
804.90	9,160	12,950			
805.00	9,577	13,804			
805.10	10,502	14,993			
805.20	11,427	16,182			
805.30	12,353	17,370			
805.40	13,278	18,559			
805.50	14,203	19,749			
805.60	14,359	21,208			
805.70	14,515	22,667			
805.80	14,670	24,126			
805.90	14,826	25,585			
806.00	14,982	27,045			
806.10	15,140	28,583			
806.20	15,299	30,120			
806.30	15,457	31,658			
806.40	15,616	33,196			
806.50	15,774	34,734			
806.60	15,935	36,351			
806.70	16,096	37,969			
806.80	16,258	39,587			
806.90	16,419	41,205			
807.00	16,580	42,822			
807.10	16,810	44,538			
807.20	17,040	46,253			
807.30	17,269	47,969			

Summary for Pond 13-1P: DA-15 SEDIMENT BASIN C

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth = 2.12" for 2-yr event
Inflow = 49.22 cfs @ 12.20 hrs, Volume= 4.425 af
Outflow = 1.98 cfs @ 15.95 hrs, Volume= 2.709 af, Atten= 96%, Lag= 224.9 min
Primary = 1.98 cfs @ 15.95 hrs, Volume= 2.709 af
Routed to Link 13-5L : PH II E&S DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 13-5L : PH II E&S DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 767.69' @ 15.95 hrs Surf.Area= 43,816 sf Storage= 216,110 cf (144,049 cf above start)

Plug-Flow detention time= 2,555.2 min calculated for 1.055 af (24% of inflow)
Center-of-Mass det. time= 1,232.5 min (2,064.8 - 832.3)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

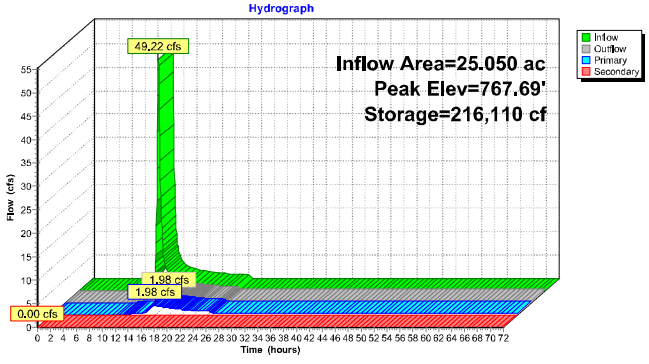
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**3.0" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads

#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.94 cfs @ 15.95 hrs HW=767.69' (Free Discharge)
└**1=CULVERT** (Passes 1.94 cfs of 53.12 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.45 cfs @ 9.10 fps)
└**3=TOP OF RISER** (Weir Controls 1.49 cfs @ 1.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 13-1P: DA-15 SEDIMENT BASIN C



Stage-Discharge for Pond 13-1P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00	765.40	0.27	0.27	0.00
760.10	0.00	0.00	0.00	765.50	0.28	0.28	0.00
760.20	0.00	0.00	0.00	765.60	0.29	0.29	0.00
760.30	0.00	0.00	0.00	765.70	0.30	0.30	0.00
760.40	0.00	0.00	0.00	765.80	0.31	0.31	0.00
760.50	0.00	0.00	0.00	765.90	0.31	0.31	0.00
760.60	0.00	0.00	0.00	766.00	0.32	0.32	0.00
760.70	0.00	0.00	0.00	766.10	0.33	0.33	0.00
760.80	0.00	0.00	0.00	766.20	0.34	0.34	0.00
760.90	0.00	0.00	0.00	766.30	0.35	0.35	0.00
761.00	0.00	0.00	0.00	766.40	0.36	0.36	0.00
761.10	0.00	0.00	0.00	766.50	0.36	0.36	0.00
761.20	0.00	0.00	0.00	766.60	0.37	0.37	0.00
761.30	0.00	0.00	0.00	766.70	0.38	0.38	0.00
761.40	0.00	0.00	0.00	766.80	0.39	0.39	0.00
761.50	0.00	0.00	0.00	766.90	0.39	0.39	0.00
761.60	0.00	0.00	0.00	767.00	0.40	0.40	0.00
761.70	0.00	0.00	0.00	767.10	0.41	0.41	0.00
761.80	0.00	0.00	0.00	767.20	0.41	0.41	0.00
761.90	0.00	0.00	0.00	767.30	0.42	0.42	0.00
762.00	0.00	0.00	0.00	767.40	0.43	0.43	0.00
762.10	0.00	0.00	0.00	767.50	0.43	0.43	0.00
762.20	0.00	0.00	0.00	767.60	0.44	0.44	0.00
762.30	0.00	0.00	0.00	767.70	2.07	2.07	0.00
762.40	0.00	0.00	0.00	767.80	5.05	5.05	0.00
762.50	0.00	0.00	0.00	767.90	8.90	8.90	0.00
762.60	0.00	0.00	0.00	768.00	13.46	13.46	0.00
762.70	0.00	0.00	0.00	768.10	18.63	18.63	0.00
762.80	0.00	0.00	0.00	768.20	24.35	24.35	0.00
762.90	0.00	0.00	0.00	768.30	30.57	30.57	0.00
763.00	0.00	0.00	0.00	768.40	37.24	37.24	0.00
763.10	0.00	0.00	0.00	768.50	44.35	44.35	0.00
763.20	0.00	0.00	0.00	768.60	51.87	51.87	0.00
763.30	0.00	0.00	0.00	768.70	56.61	56.61	0.00
763.40	0.00	0.00	0.00	768.80	56.94	56.94	0.00
763.50	0.00	0.00	0.00	768.90	57.27	57.27	0.00
763.60	0.00	0.00	0.00	769.00	57.60	57.60	0.00
763.70	0.00	0.00	0.00	769.10	57.93	57.93	0.00
763.80	0.00	0.00	0.00	769.20	58.26	58.26	0.00
763.90	0.00	0.00	0.00	769.30	58.59	58.59	0.00
764.00	0.00	0.00	0.00	769.40	59.63	58.91	0.72
764.10	0.02	0.02	0.00	769.50	63.02	59.23	3.79
764.20	0.06	0.06	0.00	769.60	67.81	59.55	8.26
764.30	0.10	0.10	0.00	769.70	73.73	59.87	13.86
764.40	0.12	0.12	0.00	769.80	80.63	60.19	20.44
764.50	0.14	0.14	0.00	769.90	88.39	60.50	27.89
764.60	0.16	0.16	0.00	770.00	96.78	60.81	35.96
764.70	0.18	0.18	0.00	770.10	105.62	61.13	44.49
764.80	0.19	0.19	0.00	770.20	115.26	61.44	53.82
764.90	0.21	0.21	0.00	770.30	125.80	61.74	64.06
765.00	0.22	0.22	0.00	770.40	137.17	62.05	75.11
765.10	0.23	0.23	0.00	770.50	149.40	62.36	87.04
765.20	0.25	0.25	0.00	770.60	162.28	62.66	99.62
765.30	0.26	0.26	0.00	770.70	175.76	62.96	112.80

Stage-Discharge for Pond 13-1P: DA-15 SEDIMENT BASIN C (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
770.80	189.81	63.26	126.55
770.90	204.38	63.56	140.82
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 13-1P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	765.40	38,397	121,733
760.10	14,188	1,454	765.50	38,717	125,525
760.20	14,426	2,909	765.60	38,945	129,453
760.30	14,663	4,363	765.70	39,172	133,382
760.40	14,901	5,818	765.80	39,400	137,311
760.50	15,139	7,272	765.90	39,627	141,239
760.60	15,276	8,821	766.00	39,855	145,168
760.70	15,414	10,369	766.10	40,085	149,211
760.80	15,551	11,917	766.20	40,316	153,254
760.90	15,689	13,465	766.30	40,546	157,297
761.00	15,826	15,014	766.40	40,777	161,340
761.10	15,966	16,631	766.50	41,007	165,383
761.20	16,105	18,249	766.60	41,240	169,542
761.30	16,245	19,866	766.70	41,473	173,701
761.40	16,384	21,483	766.80	41,707	177,860
761.50	16,524	23,101	766.90	41,940	182,019
761.60	16,666	24,789	767.00	42,173	186,178
761.70	16,808	26,477	767.10	42,409	190,455
761.80	16,949	28,165	767.20	42,645	194,731
761.90	17,091	29,852	767.30	42,880	199,007
762.00	17,233	31,540	767.40	43,116	203,283
762.10	17,377	33,300	767.50	43,352	207,560
762.20	17,521	35,059	767.60	43,591	211,954
762.30	17,664	36,818	767.70	43,829	216,349
762.40	17,808	38,577	767.80	44,068	220,744
762.50	17,952	40,337	767.90	44,306	225,139
762.60	18,098	42,168	768.00	44,545	229,534
762.70	18,244	44,000	768.10	44,786	234,049
762.80	18,390	45,832	768.20	45,028	238,563
762.90	18,536	47,663	768.30	45,269	243,078
763.00	18,682	49,495	768.40	45,511	247,593
763.10	19,206	51,494	768.50	45,752	252,108
763.20	19,729	53,493	768.60	45,996	256,744
763.30	20,253	55,492	768.70	46,240	261,380
763.40	20,776	57,491	768.80	46,484	266,017
763.50	21,300	59,491	768.90	46,728	270,653
763.60	22,837	62,005	769.00	46,972	275,289
763.70	24,374	64,519	769.10	47,219	280,048
763.80	25,910	67,033	769.20	47,466	284,807
763.90	27,447	69,547	769.30	47,712	289,566
764.00	28,984	72,062	769.40	47,959	294,325
764.10	30,379	75,309	769.50	48,206	299,084
764.20	31,774	78,556	769.60	48,455	303,966
764.30	33,168	81,803	769.70	48,705	308,849
764.40	34,563	85,050	769.80	48,954	313,732
764.50	35,958	88,297	769.90	49,204	318,615
764.60	36,190	91,951	770.00	49,453	323,498
764.70	36,422	95,605	770.10	49,706	328,507
764.80	36,654	99,258	770.20	49,960	333,516
764.90	36,886	102,912	770.30	50,213	338,524
765.00	37,118	106,566	770.40	50,467	343,533
765.10	37,438	110,358	770.50	50,720	348,542
765.20	37,758	114,150	770.60	52,330	354,016
765.30	38,077	117,941	770.70	53,940	359,491

Stage-Area-Storage for Pond 13-1P: DA-15 SEDIMENT BASIN C (continued)

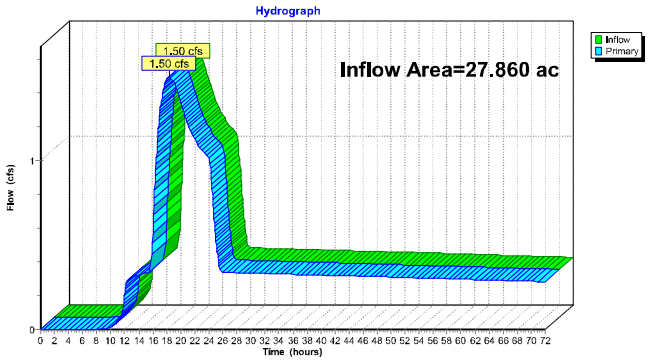
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
770.80	55,550	364,965
770.90	57,160	370,439
771.00	**58,770**	**375,914**

Summary for Link 4-4L: PH II E&S DA-04 (POST ROUTING)

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth > 0.96" for 2-yr event
Inflow = 1.50 cfs @ 18.36 hrs, Volume= 2.221 af
Primary = 1.50 cfs @ 18.36 hrs, Volume= 2.221 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4-4L: PH II E&S DA-04 (POST ROUTING)

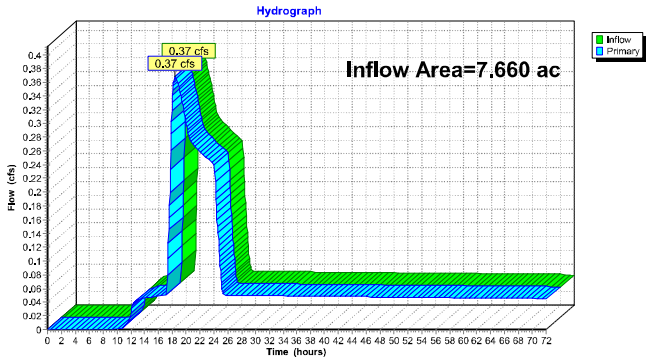


Summary for Link 6-5L: PH II E&S DA-06 (POST ROUTING)

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth > 0.59" for 2-yr event
Inflow = 0.37 cfs @ 18.41 hrs, Volume= 0.374 af
Primary = 0.37 cfs @ 18.41 hrs, Volume= 0.374 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6-5L: PH II E&S DA-06 (POST ROUTING)

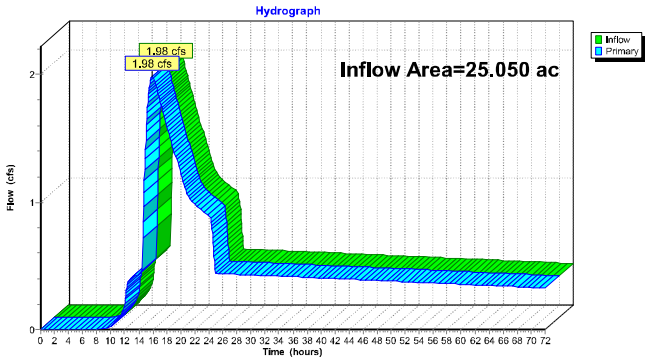


Summary for Link 13-5L: PH II E&S DA-15 (POST ROUTING)

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth > 1.30" for 2-yr event
Inflow = 1.98 cfs @ 15.95 hrs, Volume= 2.709 af
Primary = 1.98 cfs @ 15.95 hrs, Volume= 2.709 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13-5L: PH II E&S DA-15 (POST ROUTING)



Summary for Subcatchment 4-4S: PH II E&S DA-04

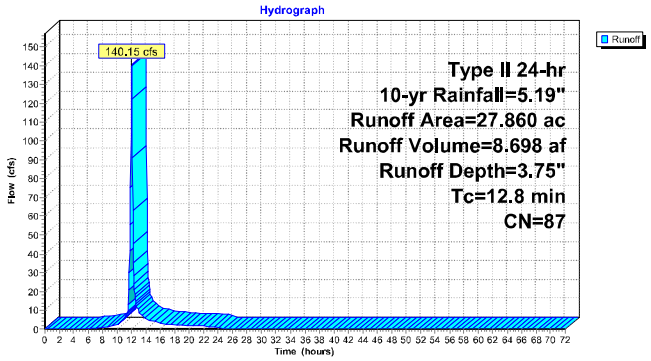
Runoff = 140.15 cfs @ 12.04 hrs, Volume= 8.698 af, Depth= 3.75"
Routed to Pond 4-1P : DA-04 SEDIMENT BASIN A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	27.090	87	
*	0.770	75	
	27.860	87	Weighted Average
	27.860		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8					Direct Entry,

Subcatchment 4-4S: PH II E&S DA-04



Summary for Subcatchment 6-5S: PH II E&S DA-06

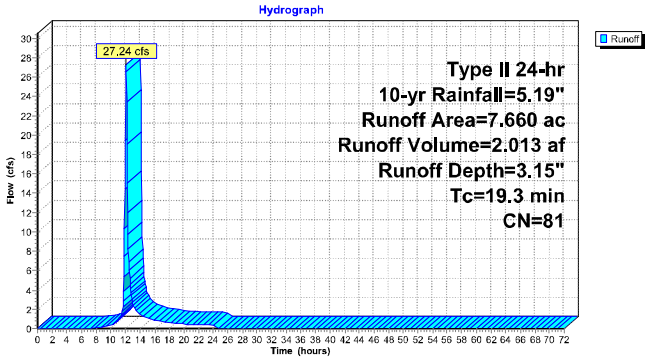
Runoff = 27.24 cfs @ 12.12 hrs, Volume= 2.013 af, Depth= 3.15"
Routed to Pond 6-1P : DA-06 SEDIMENT BASIN B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

Area (ac)	CN	Description
* 7.660	81	
7.660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3					**Direct Entry,**

Subcatchment 6-5S: PH II E&S DA-06



Summary for Subcatchment 13-5S: PH II E&S DA-15

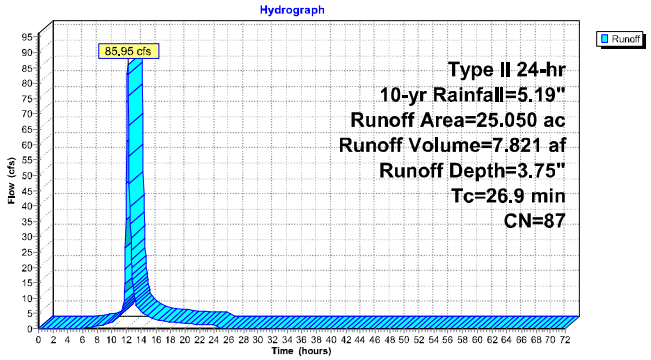
Runoff = 85.95 cfs @ 12.20 hrs, Volume= 7.821 af, Depth= 3.75"
Routed to Pond 13-1P : DA-15 SEDIMENT BASIN C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

Area (ac)	CN	Description
* 25.050	87	
25.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9					**Direct Entry,**

Subcatchment 13-5S: PH II E&S DA-15



Summary for Pond 4-1P: DA-04 SEDIMENT BASIN A

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth = 3.75" for 10-yr event
Inflow = 140.15 cfs @ 12.04 hrs, Volume= 8.698 af
Outflow = 22.68 cfs @ 12.42 hrs, Volume= 5.985 af, Atten= 84%, Lag= 22.9 min
Primary = 22.68 cfs @ 12.42 hrs, Volume= 5.985 af
Routed to Link 4-4L : PH II E&S DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4-4L : PH II E&S DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 714.07' @ 12.42 hrs Surf.Area= 76,097 sf Storage= 358,174 cf (212,851 cf above start)

Plug-Flow detention time= 1,311.5 min calculated for 2.649 af (30% of inflow)
Center-of-Mass det. time= 529.5 min (1,332.5 - 803.0)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

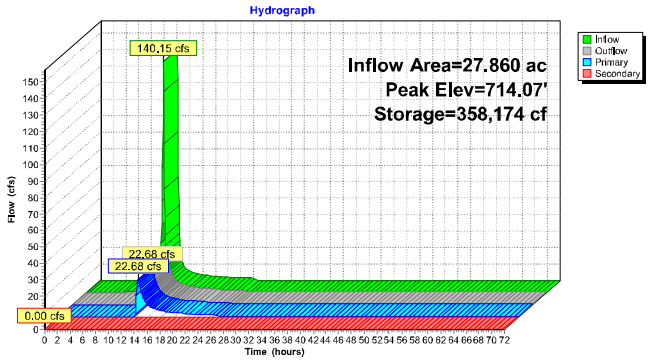
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads

#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=22.54 cfs @ 12.42 hrs HW=714.07' (Free Discharge)
└**1=CULVERT** (Passes 22.54 cfs of 51.83 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.38 cfs @ 8.27 fps)
└**3=TOP OF RISER** (Weir Controls 22.16 cfs @ 2.47 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 4-1P: DA-04 SEDIMENT BASIN A



Stage-Discharge for Pond 4-1P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00	712.40	0.25	0.25	0.00
707.10	0.00	0.00	0.00	712.50	0.26	0.26	0.00
707.20	0.00	0.00	0.00	712.60	0.27	0.27	0.00
707.30	0.00	0.00	0.00	712.70	0.28	0.28	0.00
707.40	0.00	0.00	0.00	712.80	0.29	0.29	0.00
707.50	0.00	0.00	0.00	712.90	0.29	0.29	0.00
707.60	0.00	0.00	0.00	713.00	0.30	0.30	0.00
707.70	0.00	0.00	0.00	713.10	0.31	0.31	0.00
707.80	0.00	0.00	0.00	713.20	0.32	0.32	0.00
707.90	0.00	0.00	0.00	713.30	0.33	0.33	0.00
708.00	0.00	0.00	0.00	713.40	0.33	0.33	0.00
708.10	0.00	0.00	0.00	713.50	0.34	0.34	0.00
708.20	0.00	0.00	0.00	713.60	1.97	1.97	0.00
708.30	0.00	0.00	0.00	713.70	4.95	4.95	0.00
708.40	0.00	0.00	0.00	713.80	8.80	8.80	0.00
708.50	0.00	0.00	0.00	713.90	13.36	13.36	0.00
708.60	0.00	0.00	0.00	714.00	18.54	18.54	0.00
708.70	0.00	0.00	0.00	714.10	24.25	24.25	0.00
708.80	0.00	0.00	0.00	714.20	30.47	30.47	0.00
708.90	0.00	0.00	0.00	714.30	37.15	37.15	0.00
709.00	0.00	0.00	0.00	714.40	44.26	44.26	0.00
709.10	0.00	0.00	0.00	714.50	51.77	51.77	0.00
709.20	0.00	0.00	0.00	714.60	54.27	54.27	0.00
709.30	0.00	0.00	0.00	714.70	54.72	54.72	0.00
709.40	0.00	0.00	0.00	714.80	55.17	55.17	0.00
709.50	0.00	0.00	0.00	714.90	55.61	55.61	0.00
709.60	0.00	0.00	0.00	715.00	56.05	56.05	0.00
709.70	0.00	0.00	0.00	715.10	57.78	56.49	1.29
709.80	0.00	0.00	0.00	715.20	60.63	56.92	3.71
709.90	0.00	0.00	0.00	715.30	64.30	57.35	6.95
710.00	0.00	0.00	0.00	715.40	68.67	57.77	10.90
710.10	0.00	0.00	0.00	715.50	73.66	58.20	15.46
710.20	0.00	0.00	0.00	715.60	79.24	58.61	20.63
710.30	0.00	0.00	0.00	715.70	85.11	59.03	26.08
710.40	0.00	0.00	0.00	715.80	91.41	59.44	31.96
710.50	0.00	0.00	0.00	715.90	98.46	59.86	38.61
710.60	0.00	0.00	0.00	716.00	106.03	60.26	45.76
710.70	0.00	0.00	0.00	716.10	114.29	60.67	53.63
710.80	0.00	0.00	0.00	716.20	123.12	61.07	62.05
710.90	0.00	0.00	0.00	716.30	132.38	61.47	70.91
711.00	0.00	0.00	0.00	716.40	142.16	61.87	80.29
711.10	0.02	0.02	0.00	716.50	152.30	62.26	90.04
711.20	0.06	0.06	0.00	716.60	162.94	62.66	100.28
711.30	0.09	0.09	0.00	716.70	174.27	63.05	111.23
711.40	0.12	0.12	0.00	716.80	186.14	63.43	122.71
711.50	0.14	0.14	0.00	716.90	198.55	63.82	134.73
711.60	0.15	0.15	0.00	717.00	211.49	64.20	147.29
711.70	0.17	0.17	0.00	717.10	224.97	64.58	160.39
711.80	0.18	0.18	0.00	717.20	239.00	64.96	174.04
711.90	0.19	0.19	0.00	717.30	253.58	65.34	188.25
712.00	0.21	0.21	0.00	717.40	268.71	65.71	203.00
712.10	0.22	0.22	0.00	717.50	284.40	66.08	218.32
712.20	0.23	0.23	0.00	717.60	300.64	66.45	234.19
712.30	0.24	0.24	0.00	717.70	317.45	66.82	250.63

Stage-Discharge for Pond 4-1P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
717.80	334.83	67.19	267.64
717.90	352.77	67.55	285.22
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 4-1P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0	712.40	69,370	236,573
707.10	29,102	2,947	712.50	69,735	243,455
707.20	29,350	5,895	712.60	70,101	250,520
707.30	29,599	8,842	712.70	70,466	257,585
707.40	29,847	11,790	712.80	70,832	264,650
707.50	30,095	14,737	712.90	71,197	271,715
707.60	30,346	17,809	713.00	71,563	278,780
707.70	30,596	20,882	713.10	72,052	286,058
707.80	30,847	23,954	713.20	72,541	293,337
707.90	31,097	27,026	713.30	73,029	300,615
708.00	31,348	30,098	713.40	73,518	307,894
708.10	31,600	33,296	713.50	74,007	315,172
708.20	31,853	36,494	713.60	74,372	322,664
708.30	32,105	39,692	713.70	74,737	330,156
708.40	32,358	42,890	713.80	75,102	337,648
708.50	32,610	46,088	713.90	75,467	345,140
708.60	32,864	49,412	714.00	75,832	352,632
708.70	33,119	52,737	714.10	76,199	360,307
708.80	33,373	56,061	714.20	76,567	367,982
708.90	33,628	59,386	714.30	76,934	375,657
709.00	33,882	62,711	714.40	77,302	383,332
709.10	34,139	66,163	714.50	77,669	391,007
709.20	34,395	69,615	714.60	78,039	398,867
709.30	34,652	73,068	714.70	78,410	406,726
709.40	34,908	76,520	714.80	78,780	414,586
709.50	35,165	79,972	714.90	79,151	422,445
709.60	35,424	83,554	715.00	79,521	430,305
709.70	35,683	87,135	715.10	79,894	438,350
709.80	35,942	90,716	715.20	80,267	446,395
709.90	36,201	94,297	715.30	80,639	454,441
710.00	36,460	97,879	715.40	81,012	462,486
710.10	39,025	102,166	715.50	81,385	470,531
710.20	41,591	106,453	715.60	81,761	478,764
710.30	44,156	110,741	715.70	82,136	486,996
710.40	46,722	115,028	715.80	82,512	495,228
710.50	49,287	119,315	715.90	82,887	503,461
710.60	50,379	124,517	716.00	83,263	511,693
710.70	51,471	129,719	716.10	83,641	520,114
710.80	52,562	134,920	716.20	84,019	528,535
710.90	53,654	140,122	716.30	84,398	536,956
711.00	54,746	145,324	716.40	84,776	545,377
711.10	57,019	151,366	716.50	85,154	553,798
711.20	59,292	157,409	716.60	85,535	562,408
711.30	61,565	163,452	716.70	85,916	571,019
711.40	63,838	169,495	716.80	86,296	579,629
711.50	66,111	175,538	716.90	86,677	588,240
711.60	66,471	182,239	717.00	87,058	596,851
711.70	66,831	188,940	717.10	88,443	605,903
711.80	67,192	195,641	717.20	89,829	614,955
711.90	67,552	202,342	717.30	91,214	624,007
712.00	67,912	209,044	717.40	92,600	633,059
712.10	68,277	215,926	717.50	93,985	642,111
712.20	68,641	222,808	717.60	95,403	651,864
712.30	69,006	229,691	717.70	96,821	661,617

Stage-Area-Storage for Pond 4-1P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
717.80	98,239	671,370
717.90	99,657	681,123
718.00	**101,075**	**690,876**

Summary for Pond 6-1P: DA-06 SEDIMENT BASIN B

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth = 3.15" for 10-yr event
Inflow = 27.24 cfs @ 12.12 hrs, Volume= 2.013 af
Outflow = 8.70 cfs @ 12.44 hrs, Volume= 1.332 af, Atten= 68%, Lag= 19.3 min
Primary = 8.70 cfs @ 12.44 hrs, Volume= 1.332 af
Routed to Link 6-5L : PH II E&S DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 6-5L : PH II E&S DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 807.80' @ 12.44 hrs Surf.Area= 18,224 sf Storage= 56,906 cf (43,102 cf above start)

Plug-Flow detention time= 634.0 min calculated for 1.015 af (50% of inflow)
Center-of-Mass det. time= 376.3 min (1,203.1 - 826.8)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

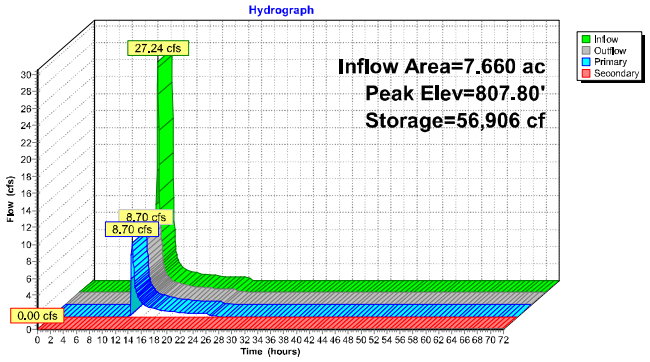
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.60 cfs @ 12.44 hrs HW=807.80' (Free Discharge)
└1=CULVERT (Passes 8.60 cfs of 56.32 cfs potential flow)
├2=1-YR CONTROL (Orifice Controls 0.05 cfs @ 7.99 fps)
└3=TOP OF RISER (Weir Controls 8.54 cfs @ 1.80 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└4=EMERGENCY SPILLWAY (Controls 0.00 cfs)

Pond 6-1P: DA-06 SEDIMENT BASIN B



Stage-Discharge for Pond 6-1P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00
802.10	0.00	0.00	0.00
802.20	0.00	0.00	0.00
802.30	0.00	0.00	0.00
802.40	0.00	0.00	0.00
802.50	0.00	0.00	0.00
802.60	0.00	0.00	0.00
802.70	0.00	0.00	0.00
802.80	0.00	0.00	0.00
802.90	0.00	0.00	0.00
803.00	0.00	0.00	0.00
803.10	0.00	0.00	0.00
803.20	0.00	0.00	0.00
803.30	0.00	0.00	0.00
803.40	0.00	0.00	0.00
803.50	0.00	0.00	0.00
803.60	0.00	0.00	0.00
803.70	0.00	0.00	0.00
803.80	0.00	0.00	0.00
803.90	0.00	0.00	0.00
804.00	0.00	0.00	0.00
804.10	0.00	0.00	0.00
804.20	0.00	0.00	0.00
804.30	0.00	0.00	0.00
804.40	0.00	0.00	0.00
804.50	0.00	0.00	0.00
804.60	0.00	0.00	0.00
804.70	0.00	0.00	0.00
804.80	0.00	0.00	0.00
804.90	0.00	0.00	0.00
805.00	0.00	0.00	0.00
805.10	0.01	0.01	0.00
805.20	0.01	0.01	0.00
805.30	0.02	0.02	0.00
805.40	0.02	0.02	0.00
805.50	0.02	0.02	0.00
805.60	0.02	0.02	0.00
805.70	0.03	0.03	0.00
805.80	0.03	0.03	0.00
805.90	0.03	0.03	0.00
806.00	0.03	0.03	0.00
806.10	0.03	0.03	0.00
806.20	0.03	0.03	0.00
806.30	0.04	0.04	0.00
806.40	0.04	0.04	0.00
806.50	0.04	0.04	0.00
806.60	0.04	0.04	0.00
806.70	0.04	0.04	0.00
806.80	0.04	0.04	0.00
806.90	0.04	0.04	0.00
807.00	0.04	0.04	0.00
807.10	0.05	0.05	0.00
807.20	0.05	0.05	0.00
807.30	0.05	0.05	0.00
807.40	0.05	0.05	0.00
807.50	0.05	0.05	0.00
807.60	1.68	1.68	0.00
807.70	4.65	4.65	0.00
807.80	8.49	8.49	0.00
807.90	13.05	13.05	0.00
808.00	18.21	18.21	0.00
808.10	23.93	23.93	0.00
808.20	30.14	30.14	0.00
808.30	36.81	36.81	0.00
808.40	43.91	43.91	0.00
808.50	51.42	51.42	0.00
808.60	57.92	57.92	0.00
808.70	59.32	58.11	1.21
808.80	61.78	58.31	3.47
808.90	65.01	58.51	6.51
809.00	68.92	58.70	10.22
809.10	73.41	58.90	14.51
809.20	78.47	59.09	19.37
809.30	83.80	59.28	24.52
809.40	89.55	59.48	30.07
809.50	96.03	59.67	36.36
809.60	102.99	59.86	43.13
809.70	110.64	60.05	50.59
809.80	118.82	60.24	58.58
809.90	127.42	60.43	66.99
810.00	**136.54**	**60.62**	**75.92**

Stage-Area-Storage for Pond 6-1P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0
802.10	2,467	264
802.20	2,580	527
802.30	2,692	791
802.40	2,805	1,054
802.50	2,917	1,318
802.60	2,998	1,630
802.70	3,079	1,942
802.80	3,161	2,254
802.90	3,242	2,566
803.00	3,323	2,878
803.10	3,406	3,231
803.20	3,490	3,584
803.30	3,573	3,937
803.40	3,657	4,291
803.50	3,740	4,644
803.60	3,825	5,039
803.70	3,911	5,434
803.80	3,996	5,830
803.90	4,082	6,225
804.00	4,167	6,621
804.10	4,832	7,204
804.20	5,498	7,787
804.30	6,163	8,370
804.40	6,829	8,953
804.50	7,494	9,536
804.60	7,911	10,389
804.70	8,327	11,243
804.80	8,744	12,096
804.90	9,160	12,950
805.00	9,577	13,804
805.10	10,502	14,993
805.20	11,427	16,182
805.30	12,353	17,370
805.40	13,278	18,559
805.50	14,203	19,749
805.60	14,359	21,208
805.70	14,515	22,667
805.80	14,670	24,126
805.90	14,826	25,585
806.00	14,982	27,045
806.10	15,140	28,583
806.20	15,299	30,120
806.30	15,457	31,658
806.40	15,616	33,196
806.50	15,774	34,734
806.60	15,935	36,351
806.70	16,096	37,969
806.80	16,258	39,587
806.90	16,419	41,205
807.00	16,580	42,822
807.10	16,810	44,538
807.20	17,040	46,253
807.30	17,269	47,969
807.40	17,499	49,684
807.50	17,729	51,400
807.60	17,892	53,213
807.70	18,055	55,027
807.80	18,219	56,841
807.90	18,382	58,654
808.00	18,545	60,468
808.10	18,710	62,364
808.20	18,876	64,260
808.30	19,041	66,156
808.40	19,207	68,051
808.50	19,372	69,947
808.60	19,540	71,926
808.70	19,708	73,906
808.80	19,876	75,885
808.90	20,044	77,864
809.00	20,212	79,843
809.10	20,384	81,907
809.20	20,556	83,972
809.30	20,728	86,036
809.40	20,900	88,100
809.50	21,072	90,164
809.60	23,102	92,779
809.70	25,133	95,394
809.80	27,163	98,009
809.90	29,194	100,623
810.00	**31,224**	**103,238**

Summary for Pond 13-1P: DA-15 SEDIMENT BASIN C

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth = 3.75" for 10-yr event
Inflow = 85.95 cfs @ 12.20 hrs, Volume= 7.821 af
Outflow = 32.02 cfs @ 12.57 hrs, Volume= 6.096 af, Atten= 63%, Lag= 22.5 min
Primary = 32.02 cfs @ 12.57 hrs, Volume= 6.096 af
Routed to Link 13-5L : PH II E&S DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 13-5L : PH II E&S DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 768.32' @ 12.57 hrs Surf.Area= 45,321 sf Storage= 244,047 cf (171,986 cf above start)

Plug-Flow detention time= 924.7 min calculated for 4.438 af (57% of inflow)
Center-of-Mass det. time= 579.8 min (1,395.9 - 816.1)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

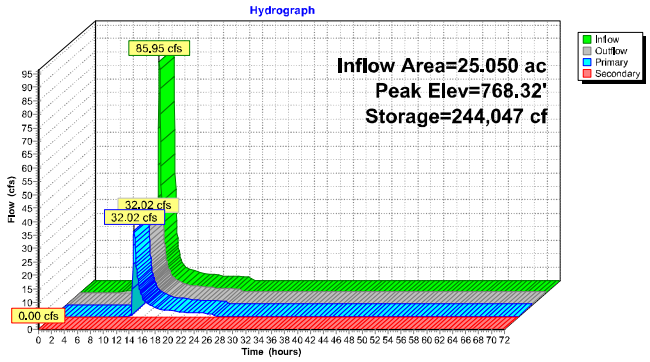
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**3.0" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads

#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=31.77 cfs @ 12.57 hrs HW=768.32' (Free Discharge)
└1=**CULVERT** (Passes 31.77 cfs of 55.31 cfs potential flow)
└2=**1-YR CONTROL** (Orifice Controls 0.48 cfs @ 9.86 fps)
└3=**TOP OF RISER** (Weir Controls 31.28 cfs @ 2.77 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└4=**EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 13-1P: DA-15 SEDIMENT BASIN C



Stage-Discharge for Pond 13-1P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00	765.40	0.27	0.27	0.00
760.10	0.00	0.00	0.00	765.50	0.28	0.28	0.00
760.20	0.00	0.00	0.00	765.60	0.29	0.29	0.00
760.30	0.00	0.00	0.00	765.70	0.30	0.30	0.00
760.40	0.00	0.00	0.00	765.80	0.31	0.31	0.00
760.50	0.00	0.00	0.00	765.90	0.31	0.31	0.00
760.60	0.00	0.00	0.00	766.00	0.32	0.32	0.00
760.70	0.00	0.00	0.00	766.10	0.33	0.33	0.00
760.80	0.00	0.00	0.00	766.20	0.34	0.34	0.00
760.90	0.00	0.00	0.00	766.30	0.35	0.35	0.00
761.00	0.00	0.00	0.00	766.40	0.36	0.36	0.00
761.10	0.00	0.00	0.00	766.50	0.36	0.36	0.00
761.20	0.00	0.00	0.00	766.60	0.37	0.37	0.00
761.30	0.00	0.00	0.00	766.70	0.38	0.38	0.00
761.40	0.00	0.00	0.00	766.80	0.39	0.39	0.00
761.50	0.00	0.00	0.00	766.90	0.39	0.39	0.00
761.60	0.00	0.00	0.00	767.00	0.40	0.40	0.00
761.70	0.00	0.00	0.00	767.10	0.41	0.41	0.00
761.80	0.00	0.00	0.00	767.20	0.41	0.41	0.00
761.90	0.00	0.00	0.00	767.30	0.42	0.42	0.00
762.00	0.00	0.00	0.00	767.40	0.43	0.43	0.00
762.10	0.00	0.00	0.00	767.50	0.43	0.43	0.00
762.20	0.00	0.00	0.00	767.60	0.44	0.44	0.00
762.30	0.00	0.00	0.00	767.70	2.07	2.07	0.00
762.40	0.00	0.00	0.00	767.80	5.05	5.05	0.00
762.50	0.00	0.00	0.00	767.90	8.90	8.90	0.00
762.60	0.00	0.00	0.00	768.00	13.46	13.46	0.00
762.70	0.00	0.00	0.00	768.10	18.63	18.63	0.00
762.80	0.00	0.00	0.00	768.20	24.35	24.35	0.00
762.90	0.00	0.00	0.00	768.30	30.57	30.57	0.00
763.00	0.00	0.00	0.00	768.40	37.24	37.24	0.00
763.10	0.00	0.00	0.00	768.50	44.35	44.35	0.00
763.20	0.00	0.00	0.00	768.60	51.87	51.87	0.00
763.30	0.00	0.00	0.00	768.70	56.61	56.61	0.00
763.40	0.00	0.00	0.00	768.80	56.94	56.94	0.00
763.50	0.00	0.00	0.00	768.90	57.27	57.27	0.00
763.60	0.00	0.00	0.00	769.00	57.60	57.60	0.00
763.70	0.00	0.00	0.00	769.10	57.93	57.93	0.00
763.80	0.00	0.00	0.00	769.20	58.26	58.26	0.00
763.90	0.00	0.00	0.00	769.30	58.59	58.59	0.00
764.00	0.00	0.00	0.00	769.40	59.63	58.91	0.72
764.10	0.02	0.02	0.00	769.50	63.02	59.23	3.79
764.20	0.06	0.06	0.00	769.60	67.81	59.55	8.26
764.30	0.10	0.10	0.00	769.70	73.73	59.87	13.86
764.40	0.12	0.12	0.00	769.80	80.63	60.19	20.44
764.50	0.14	0.14	0.00	769.90	88.39	60.50	27.89
764.60	0.16	0.16	0.00	770.00	96.78	60.81	35.96
764.70	0.18	0.18	0.00	770.10	105.62	61.13	44.49
764.80	0.19	0.19	0.00	770.20	115.26	61.44	53.82
764.90	0.21	0.21	0.00	770.30	125.80	61.74	64.06
765.00	0.22	0.22	0.00	770.40	137.17	62.05	75.11
765.10	0.23	0.23	0.00	770.50	149.40	62.36	87.04
765.20	0.25	0.25	0.00	770.60	162.28	62.66	99.62
765.30	0.26	0.26	0.00	770.70	175.76	62.96	112.80

Stage-Discharge for Pond 13-1P: DA-15 SEDIMENT BASIN C (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
770.80	189.81	63.26	126.55
770.90	204.38	63.56	140.82
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 13-1P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	765.40	38,397	121,733
760.10	14,188	1,454	765.50	38,717	125,525
760.20	14,426	2,909	765.60	38,945	129,453
760.30	14,663	4,363	765.70	39,172	133,382
760.40	14,901	5,818	765.80	39,400	137,311
760.50	15,139	7,272	765.90	39,627	141,239
760.60	15,276	8,821	766.00	39,855	145,168
760.70	15,414	10,369	766.10	40,085	149,211
760.80	15,551	11,917	766.20	40,316	153,254
760.90	15,689	13,465	766.30	40,546	157,297
761.00	15,826	15,014	766.40	40,777	161,340
761.10	15,966	16,631	766.50	41,007	165,383
761.20	16,105	18,249	766.60	41,240	169,542
761.30	16,245	19,866	766.70	41,473	173,701
761.40	16,384	21,483	766.80	41,707	177,860
761.50	16,524	23,101	766.90	41,940	182,019
761.60	16,666	24,789	767.00	42,173	186,178
761.70	16,808	26,477	767.10	42,409	190,455
761.80	16,949	28,165	767.20	42,645	194,731
761.90	17,091	29,852	767.30	42,880	199,007
762.00	17,233	31,540	767.40	43,116	203,283
762.10	17,377	33,300	767.50	43,352	207,560
762.20	17,521	35,059	767.60	43,591	211,954
762.30	17,664	36,818	767.70	43,829	216,349
762.40	17,808	38,577	767.80	44,068	220,744
762.50	17,952	40,337	767.90	44,306	225,139
762.60	18,098	42,168	768.00	44,545	229,534
762.70	18,244	44,000	768.10	44,786	234,049
762.80	18,390	45,832	768.20	45,028	238,563
762.90	18,536	47,663	768.30	45,269	243,078
763.00	18,682	49,495	768.40	45,511	247,593
763.10	19,206	51,494	768.50	45,752	252,108
763.20	19,729	53,493	768.60	45,996	256,744
763.30	20,253	55,492	768.70	46,240	261,380
763.40	20,776	57,491	768.80	46,484	266,017
763.50	21,300	59,491	768.90	46,728	270,653
763.60	22,837	62,005	769.00	46,972	275,289
763.70	24,374	64,519	769.10	47,219	280,048
763.80	25,910	67,033	769.20	47,466	284,807
763.90	27,447	69,547	769.30	47,712	289,566
764.00	28,984	72,062	769.40	47,959	294,325
764.10	30,379	75,309	769.50	48,206	299,084
764.20	31,774	78,556	769.60	48,455	303,966
764.30	33,168	81,803	769.70	48,705	308,849
764.40	34,563	85,050	769.80	48,954	313,732
764.50	35,958	88,297	769.90	49,204	318,615
764.60	36,190	91,951	770.00	49,453	323,498
764.70	36,422	95,605	770.10	49,706	328,507
764.80	36,654	99,258	770.20	49,960	333,516
764.90	36,886	102,912	770.30	50,213	338,524
765.00	37,118	106,566	770.40	50,467	343,533
765.10	37,438	110,358	770.50	50,720	348,542
765.20	37,758	114,150	770.60	52,330	354,016
765.30	38,077	117,941	770.70	53,940	359,491

Stage-Area-Storage for Pond 13-1P: DA-15 SEDIMENT BASIN C (continued)

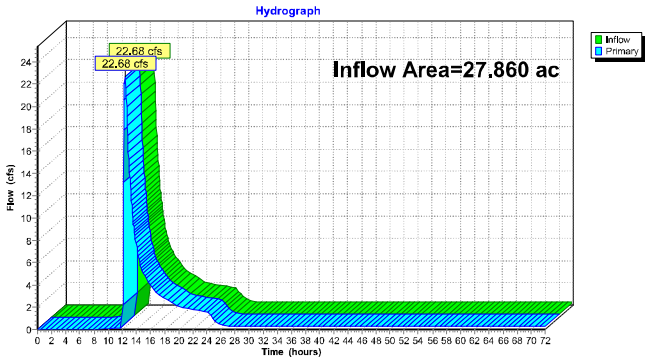
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
770.80	55,550	364,965
770.90	57,160	370,439
771.00	**58,770**	**375,914**

Summary for Link 4-4L: PH II E&S DA-04 (POST ROUTING)

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth > 2.58" for 10-yr event
Inflow = 22.68 cfs @ 12.42 hrs, Volume= 5.985 af
Primary = 22.68 cfs @ 12.42 hrs, Volume= 5.985 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4-4L: PH II E&S DA-04 (POST ROUTING)

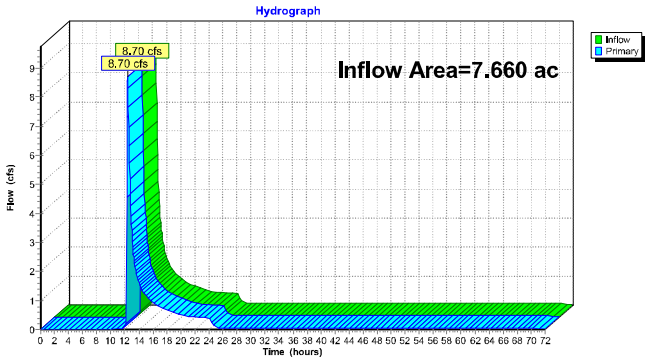


Summary for Link 6-5L: PH II E&S DA-06 (POST ROUTING)

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth > 2.09" for 10-yr event
Inflow = 8.70 cfs @ 12.44 hrs, Volume= 1.332 af
Primary = 8.70 cfs @ 12.44 hrs, Volume= 1.332 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6-5L: PH II E&S DA-06 (POST ROUTING)

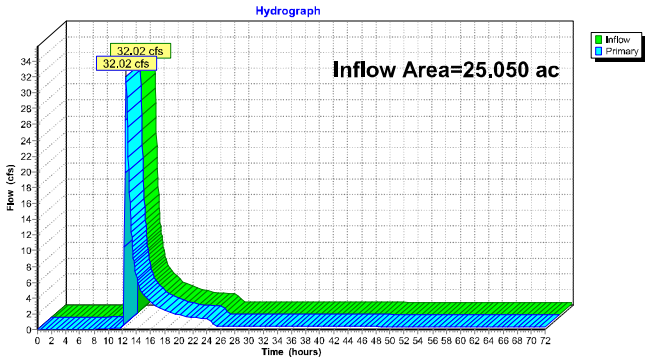


Summary for Link 13-5L: PH II E&S DA-15 (POST ROUTING)

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth > 2.92" for 10-yr event
Inflow = 32.02 cfs @ 12.57 hrs, Volume= 6.096 af
Primary = 32.02 cfs @ 12.57 hrs, Volume= 6.096 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13-5L: PH II E&S DA-15 (POST ROUTING)



Summary for Subcatchment 4-4S: PH II E&S DA-04

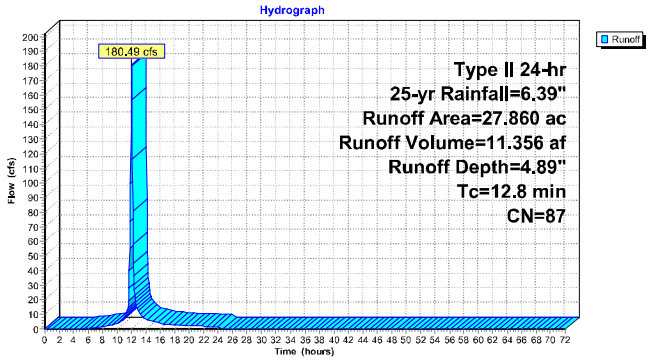
Runoff = 180.49 cfs @ 12.04 hrs, Volume= 11.356 af, Depth= 4.89"
Routed to Pond 4-1P : DA-04 SEDIMENT BASIN A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.39"

	Area (ac)	CN	Description
*	27.090	87	
*	0.770	75	
	27.860	87	Weighted Average
	27.860		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8					Direct Entry,

Subcatchment 4-4S: PH II E&S DA-04



Summary for Subcatchment 6-5S: PH II E&S DA-06

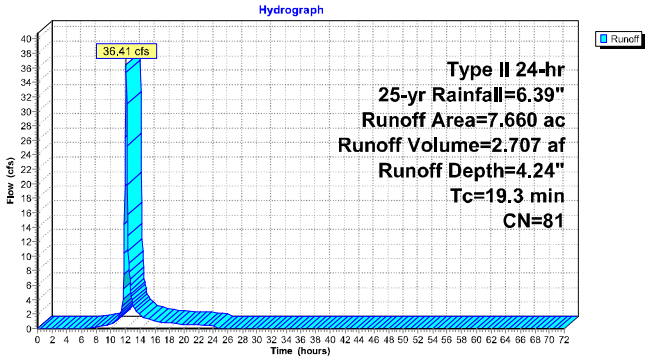
Runoff = 36.41 cfs @ 12.11 hrs, Volume= 2.707 af, Depth= 4.24"
Routed to Pond 6-1P : DA-06 SEDIMENT BASIN B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.39"

	Area (ac)	CN	Description
*	7.660	81	
	7.660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3					Direct Entry,

Subcatchment 6-5S: PH II E&S DA-06



Summary for Subcatchment 13-5S: PH II E&S DA-15

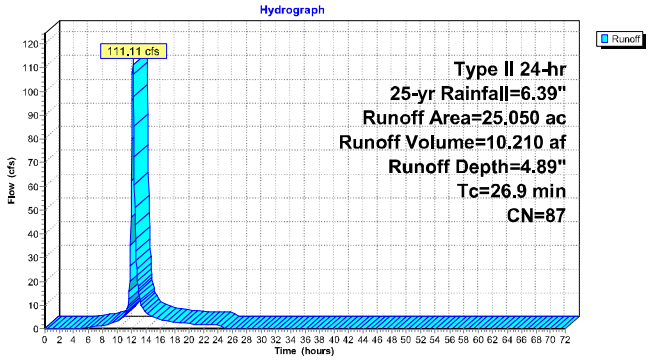
Runoff = 111.11 cfs @ 12.20 hrs, Volume= 10.210 af, Depth= 4.89"
Routed to Pond 13-1P : DA-15 SEDIMENT BASIN C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=6.39"

	Area (ac)	CN	Description
*	25.050	87	
	25.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9					Direct Entry,

Subcatchment 13-5S: PH II E&S DA-15



Summary for Pond 4-1P: DA-04 SEDIMENT BASIN A

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth = 4.89" for 25-yr event
Inflow = 180.49 cfs @ 12.04 hrs, Volume= 11.356 af
Outflow = 54.28 cfs @ 12.27 hrs, Volume= 8.636 af, Atten= 70%, Lag= 13.5 min
Primary = 54.28 cfs @ 12.27 hrs, Volume= 8.636 af
Routed to Link 4-4L : PH II E&S DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4-4L : PH II E&S DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 714.59' @ 12.27 hrs Surf.Area= 78,010 sf Storage= 398,244 cf (252,920 cf above start)

Plug-Flow detention time= 770.0 min calculated for 5.300 af (47% of inflow)
Center-of-Mass det. time= 382.6 min (1,178.1 - 795.6)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

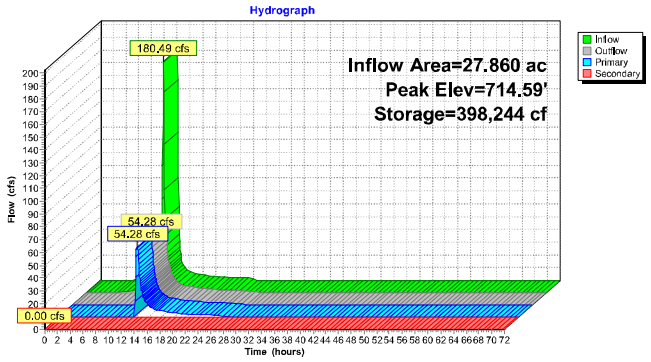
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads

#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=54.22 cfs @ 12.27 hrs HW=714.59' (Free Discharge)
└1=**CULVERT** (Barrel Controls 54.22 cfs @ 11.04 fps)
└2=**1-YR CONTROL** (Passes < 0.41 cfs potential flow)
└3=**TOP OF RISER** (Passes < 58.24 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└4=**EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 4-1P: DA-04 SEDIMENT BASIN A



Stage-Discharge for Pond 4-1P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00	712.40	0.25	0.25	0.00
707.10	0.00	0.00	0.00	712.50	0.26	0.26	0.00
707.20	0.00	0.00	0.00	712.60	0.27	0.27	0.00
707.30	0.00	0.00	0.00	712.70	0.28	0.28	0.00
707.40	0.00	0.00	0.00	712.80	0.29	0.29	0.00
707.50	0.00	0.00	0.00	712.90	0.29	0.29	0.00
707.60	0.00	0.00	0.00	713.00	0.30	0.30	0.00
707.70	0.00	0.00	0.00	713.10	0.31	0.31	0.00
707.80	0.00	0.00	0.00	713.20	0.32	0.32	0.00
707.90	0.00	0.00	0.00	713.30	0.33	0.33	0.00
708.00	0.00	0.00	0.00	713.40	0.33	0.33	0.00
708.10	0.00	0.00	0.00	713.50	0.34	0.34	0.00
708.20	0.00	0.00	0.00	713.60	1.97	1.97	0.00
708.30	0.00	0.00	0.00	713.70	4.95	4.95	0.00
708.40	0.00	0.00	0.00	713.80	8.80	8.80	0.00
708.50	0.00	0.00	0.00	713.90	13.36	13.36	0.00
708.60	0.00	0.00	0.00	714.00	18.54	18.54	0.00
708.70	0.00	0.00	0.00	714.10	24.25	24.25	0.00
708.80	0.00	0.00	0.00	714.20	30.47	30.47	0.00
708.90	0.00	0.00	0.00	714.30	37.15	37.15	0.00
709.00	0.00	0.00	0.00	714.40	44.26	44.26	0.00
709.10	0.00	0.00	0.00	714.50	51.77	51.77	0.00
709.20	0.00	0.00	0.00	714.60	54.27	54.27	0.00
709.30	0.00	0.00	0.00	714.70	54.72	54.72	0.00
709.40	0.00	0.00	0.00	714.80	55.17	55.17	0.00
709.50	0.00	0.00	0.00	714.90	55.61	55.61	0.00
709.60	0.00	0.00	0.00	715.00	56.05	56.05	0.00
709.70	0.00	0.00	0.00	715.10	57.78	56.49	1.29
709.80	0.00	0.00	0.00	715.20	60.63	56.92	3.71
709.90	0.00	0.00	0.00	715.30	64.30	57.35	6.95
710.00	0.00	0.00	0.00	715.40	68.67	57.77	10.90
710.10	0.00	0.00	0.00	715.50	73.66	58.20	15.46
710.20	0.00	0.00	0.00	715.60	79.24	58.61	20.63
710.30	0.00	0.00	0.00	715.70	85.11	59.03	26.08
710.40	0.00	0.00	0.00	715.80	91.41	59.44	31.96
710.50	0.00	0.00	0.00	715.90	98.46	59.86	38.61
710.60	0.00	0.00	0.00	716.00	106.03	60.26	45.76
710.70	0.00	0.00	0.00	716.10	114.29	60.67	53.63
710.80	0.00	0.00	0.00	716.20	123.12	61.07	62.05
710.90	0.00	0.00	0.00	716.30	132.38	61.47	70.91
711.00	0.00	0.00	0.00	716.40	142.16	61.87	80.29
711.10	0.02	0.02	0.00	716.50	152.30	62.26	90.04
711.20	0.06	0.06	0.00	716.60	162.94	62.66	100.28
711.30	0.09	0.09	0.00	716.70	174.27	63.05	111.23
711.40	0.12	0.12	0.00	716.80	186.14	63.43	122.71
711.50	0.14	0.14	0.00	716.90	198.55	63.82	134.73
711.60	0.15	0.15	0.00	717.00	211.49	64.20	147.29
711.70	0.17	0.17	0.00	717.10	224.97	64.58	160.39
711.80	0.18	0.18	0.00	717.20	239.00	64.96	174.04
711.90	0.19	0.19	0.00	717.30	253.58	65.34	188.25
712.00	0.21	0.21	0.00	717.40	268.71	65.71	203.00
712.10	0.22	0.22	0.00	717.50	284.40	66.08	218.32
712.20	0.23	0.23	0.00	717.60	300.64	66.45	234.19
712.30	0.24	0.24	0.00	717.70	317.45	66.82	250.63

Stage-Discharge for Pond 4-1P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
717.80	334.83	67.19	267.64
717.90	352.77	67.55	285.22
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 4-1P: DA-04 SEDIMENT BASIN A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0	712.40	69,370	236,573
707.10	29,102	2,947	712.50	69,735	243,455
707.20	29,350	5,895	712.60	70,101	250,520
707.30	29,599	8,842	712.70	70,466	257,585
707.40	29,847	11,790	712.80	70,832	264,650
707.50	30,095	14,737	712.90	71,197	271,715
707.60	30,346	17,809	713.00	71,563	278,780
707.70	30,596	20,882	713.10	72,052	286,058
707.80	30,847	23,954	713.20	72,541	293,337
707.90	31,097	27,026	713.30	73,029	300,615
708.00	31,348	30,098	713.40	73,518	307,894
708.10	31,600	33,296	713.50	74,007	315,172
708.20	31,853	36,494	713.60	74,372	322,664
708.30	32,105	39,692	713.70	74,737	330,156
708.40	32,358	42,890	713.80	75,102	337,648
708.50	32,610	46,088	713.90	75,467	345,140
708.60	32,864	49,412	714.00	75,832	352,632
708.70	33,119	52,737	714.10	76,199	360,307
708.80	33,373	56,061	714.20	76,567	367,982
708.90	33,628	59,386	714.30	76,934	375,657
709.00	33,882	62,711	714.40	77,302	383,332
709.10	34,139	66,163	714.50	77,669	391,007
709.20	34,395	69,615	714.60	78,039	398,867
709.30	34,652	73,068	714.70	78,410	406,726
709.40	34,908	76,520	714.80	78,780	414,586
709.50	35,165	79,972	714.90	79,151	422,445
709.60	35,424	83,554	715.00	79,521	430,305
709.70	35,683	87,135	715.10	79,894	438,350
709.80	35,942	90,716	715.20	80,267	446,395
709.90	36,201	94,297	715.30	80,639	454,441
710.00	36,460	97,879	715.40	81,012	462,486
710.10	39,025	102,166	715.50	81,385	470,531
710.20	41,591	106,453	715.60	81,761	478,764
710.30	44,156	110,741	715.70	82,136	486,996
710.40	46,722	115,028	715.80	82,512	495,228
710.50	49,287	119,315	715.90	82,887	503,461
710.60	50,379	124,517	716.00	83,263	511,693
710.70	51,471	129,719	716.10	83,641	520,114
710.80	52,562	134,920	716.20	84,019	528,535
710.90	53,654	140,122	716.30	84,398	536,956
711.00	54,746	145,324	716.40	84,776	545,377
711.10	57,019	151,366	716.50	85,154	553,798
711.20	59,292	157,409	716.60	85,535	562,408
711.30	61,565	163,452	716.70	85,916	571,019
711.40	63,838	169,495	716.80	86,296	579,629
711.50	66,111	175,538	716.90	86,677	588,240
711.60	66,471	182,239	717.00	87,058	596,851
711.70	66,831	188,940	717.10	88,443	605,903
711.80	67,192	195,641	717.20	89,829	614,955
711.90	67,552	202,342	717.30	91,214	624,007
712.00	67,912	209,044	717.40	92,600	633,059
712.10	68,277	215,926	717.50	93,985	642,111
712.20	68,641	222,808	717.60	95,403	651,864
712.30	69,006	229,691	717.70	96,821	661,617

Stage-Area-Storage for Pond 4-1P: DA-04 SEDIMENT BASIN A (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
717.80	98,239	671,370
717.90	99,657	681,123
718.00	**101,075**	**690,876**

Summary for Pond 6-1P: DA-06 SEDIMENT BASIN B

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth = 4.24" for 25-yr event
Inflow = 36.41 cfs @ 12.11 hrs, Volume= 2.707 af
Outflow = 22.43 cfs @ 12.28 hrs, Volume= 2.026 af, Atten= 38%, Lag= 9.9 min
Primary = 22.43 cfs @ 12.28 hrs, Volume= 2.026 af
Routed to Link 6-5L : PH II E&S DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 6-5L : PH II E&S DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 808.07' @ 12.28 hrs Surf.Area= 18,668 sf Storage= 61,879 cf (48,075 cf above start)

Plug-Flow detention time= 422.3 min calculated for 1.708 af (63% of inflow)
Center-of-Mass det. time= 255.5 min (1,073.9 - 818.3)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

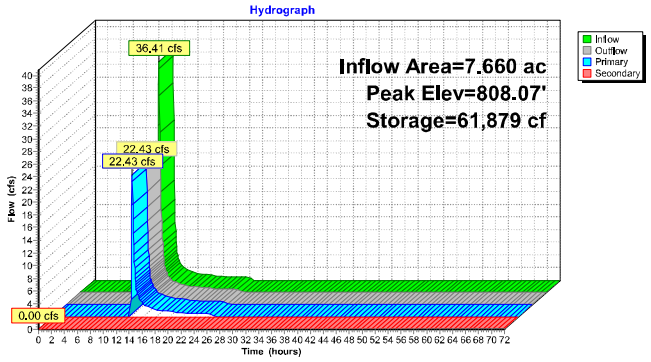
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=22.16 cfs @ 12.28 hrs HW=808.07' (Free Discharge)
└**1=CULVERT** (Passes 22.16 cfs of 56.86 cfs potential flow)
├**2=1-YR CONTROL** (Orifice Controls 0.06 cfs @ 8.37 fps)
└**3=TOP OF RISER** (Weir Controls 22.10 cfs @ 2.47 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 6-1P: DA-06 SEDIMENT BASIN B



Stage-Discharge for Pond 6-1P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00	807.40	0.05	0.05	0.00
802.10	0.00	0.00	0.00	807.50	0.05	0.05	0.00
802.20	0.00	0.00	0.00	807.60	1.68	1.68	0.00
802.30	0.00	0.00	0.00	807.70	4.65	4.65	0.00
802.40	0.00	0.00	0.00	807.80	8.49	8.49	0.00
802.50	0.00	0.00	0.00	807.90	13.05	13.05	0.00
802.60	0.00	0.00	0.00	808.00	18.21	18.21	0.00
802.70	0.00	0.00	0.00	808.10	23.93	23.93	0.00
802.80	0.00	0.00	0.00	808.20	30.14	30.14	0.00
802.90	0.00	0.00	0.00	808.30	36.81	36.81	0.00
803.00	0.00	0.00	0.00	808.40	43.91	43.91	0.00
803.10	0.00	0.00	0.00	808.50	51.42	51.42	0.00
803.20	0.00	0.00	0.00	808.60	57.92	57.92	0.00
803.30	0.00	0.00	0.00	808.70	59.32	58.11	1.21
803.40	0.00	0.00	0.00	808.80	61.78	58.31	3.47
803.50	0.00	0.00	0.00	808.90	65.01	58.51	6.51
803.60	0.00	0.00	0.00	809.00	68.92	58.70	10.22
803.70	0.00	0.00	0.00	809.10	73.41	58.90	14.51
803.80	0.00	0.00	0.00	809.20	78.47	59.09	19.37
803.90	0.00	0.00	0.00	809.30	83.80	59.28	24.52
804.00	0.00	0.00	0.00	809.40	89.55	59.48	30.07
804.10	0.00	0.00	0.00	809.50	96.03	59.67	36.36
804.20	0.00	0.00	0.00	809.60	102.99	59.86	43.13
804.30	0.00	0.00	0.00	809.70	110.64	60.05	50.59
804.40	0.00	0.00	0.00	809.80	118.82	60.24	58.58
804.50	0.00	0.00	0.00	809.90	127.42	60.43	66.99
804.60	0.00	0.00	0.00	810.00	**136.54**	**60.62**	**75.92**
804.70	0.00	0.00	0.00				
804.80	0.00	0.00	0.00				
804.90	0.00	0.00	0.00				
805.00	0.00	0.00	0.00				
805.10	0.01	0.01	0.00				
805.20	0.01	0.01	0.00				
805.30	0.02	0.02	0.00				
805.40	0.02	0.02	0.00				
805.50	0.02	0.02	0.00				
805.60	0.02	0.02	0.00				
805.70	0.03	0.03	0.00				
805.80	0.03	0.03	0.00				
805.90	0.03	0.03	0.00				
806.00	0.03	0.03	0.00				
806.10	0.03	0.03	0.00				
806.20	0.03	0.03	0.00				
806.30	0.04	0.04	0.00				
806.40	0.04	0.04	0.00				
806.50	0.04	0.04	0.00				
806.60	0.04	0.04	0.00				
806.70	0.04	0.04	0.00				
806.80	0.04	0.04	0.00				
806.90	0.04	0.04	0.00				
807.00	0.04	0.04	0.00				
807.10	0.05	0.05	0.00				
807.20	0.05	0.05	0.00				
807.30	0.05	0.05	0.00				

Stage-Area-Storage for Pond 6-1P: DA-06 SEDIMENT BASIN B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0	807.40	17,499	49,684
802.10	2,467	264	807.50	17,729	51,400
802.20	2,580	527	807.60	17,892	53,213
802.30	2,692	791	807.70	18,055	55,027
802.40	2,805	1,054	807.80	18,219	56,841
802.50	2,917	1,318	807.90	18,382	58,654
802.60	2,998	1,630	808.00	18,545	60,468
802.70	3,079	1,942	808.10	18,710	62,364
802.80	3,161	2,254	808.20	18,876	64,260
802.90	3,242	2,566	808.30	19,041	66,156
803.00	3,323	2,878	808.40	19,207	68,051
803.10	3,406	3,231	808.50	19,372	69,947
803.20	3,490	3,584	808.60	19,540	71,926
803.30	3,573	3,937	808.70	19,708	73,906
803.40	3,657	4,291	808.80	19,876	75,885
803.50	3,740	4,644	808.90	20,044	77,864
803.60	3,825	5,039	809.00	20,212	79,843
803.70	3,911	5,434	809.10	20,384	81,907
803.80	3,996	5,830	809.20	20,556	83,972
803.90	4,082	6,225	809.30	20,728	86,036
804.00	4,167	6,621	809.40	20,900	88,100
804.10	4,832	7,204	809.50	21,072	90,164
804.20	5,498	7,787	809.60	23,102	92,779
804.30	6,163	8,370	809.70	25,133	95,394
804.40	6,829	8,953	809.80	27,163	98,009
804.50	7,494	9,536	809.90	29,194	100,623
804.60	7,911	10,389	810.00	**31,224**	**103,238**
804.70	8,327	11,243			
804.80	8,744	12,096			
804.90	9,160	12,950			
805.00	9,577	13,804			
805.10	10,502	14,993			
805.20	11,427	16,182			
805.30	12,353	17,370			
805.40	13,278	18,559			
805.50	14,203	19,749			
805.60	14,359	21,208			
805.70	14,515	22,667			
805.80	14,670	24,126			
805.90	14,826	25,585			
806.00	14,982	27,045			
806.10	15,140	28,583			
806.20	15,299	30,120			
806.30	15,457	31,658			
806.40	15,616	33,196			
806.50	15,774	34,734			
806.60	15,935	36,351			
806.70	16,096	37,969			
806.80	16,258	39,587			
806.90	16,419	41,205			
807.00	16,580	42,822			
807.10	16,810	44,538			
807.20	17,040	46,253			
807.30	17,269	47,969			

Summary for Pond 13-1P: DA-15 SEDIMENT BASIN C

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth = 4.89" for 25-yr event
Inflow = 111.11 cfs @ 12.20 hrs, Volume= 10.210 af
Outflow = 57.03 cfs @ 12.47 hrs, Volume= 8.481 af, Atten= 49%, Lag= 16.2 min
Primary = 57.03 cfs @ 12.47 hrs, Volume= 8.481 af
Routed to Link 13-5L : PH II E&S DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 13-5L : PH II E&S DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 768.83' @ 12.47 hrs Surf.Area= 46,551 sf Storage= 267,281 cf (195,220 cf above start)

Plug-Flow detention time= 649.2 min calculated for 6.827 af (67% of inflow)
Center-of-Mass det. time= 428.7 min (1,237.3 - 808.6)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

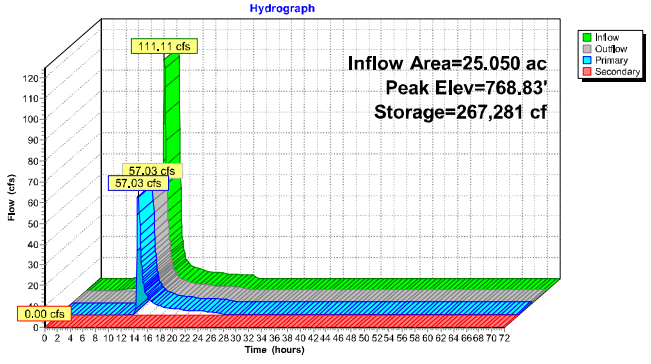
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**3.0" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads

#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=57.02 cfs @ 12.47 hrs HW=768.82' (Free Discharge)
└**1=CULVERT** (Barrel Controls 57.02 cfs @ 11.62 fps)
└**2=1-YR CONTROL** (Passes < 0.51 cfs potential flow)
└**3=TOP OF RISER** (Passes < 69.42 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 13-1P: DA-15 SEDIMENT BASIN C



Stage-Discharge for Pond 13-1P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00	765.40	0.27	0.27	0.00
760.10	0.00	0.00	0.00	765.50	0.28	0.28	0.00
760.20	0.00	0.00	0.00	765.60	0.29	0.29	0.00
760.30	0.00	0.00	0.00	765.70	0.30	0.30	0.00
760.40	0.00	0.00	0.00	765.80	0.31	0.31	0.00
760.50	0.00	0.00	0.00	765.90	0.31	0.31	0.00
760.60	0.00	0.00	0.00	766.00	0.32	0.32	0.00
760.70	0.00	0.00	0.00	766.10	0.33	0.33	0.00
760.80	0.00	0.00	0.00	766.20	0.34	0.34	0.00
760.90	0.00	0.00	0.00	766.30	0.35	0.35	0.00
761.00	0.00	0.00	0.00	766.40	0.36	0.36	0.00
761.10	0.00	0.00	0.00	766.50	0.36	0.36	0.00
761.20	0.00	0.00	0.00	766.60	0.37	0.37	0.00
761.30	0.00	0.00	0.00	766.70	0.38	0.38	0.00
761.40	0.00	0.00	0.00	766.80	0.39	0.39	0.00
761.50	0.00	0.00	0.00	766.90	0.39	0.39	0.00
761.60	0.00	0.00	0.00	767.00	0.40	0.40	0.00
761.70	0.00	0.00	0.00	767.10	0.41	0.41	0.00
761.80	0.00	0.00	0.00	767.20	0.41	0.41	0.00
761.90	0.00	0.00	0.00	767.30	0.42	0.42	0.00
762.00	0.00	0.00	0.00	767.40	0.43	0.43	0.00
762.10	0.00	0.00	0.00	767.50	0.43	0.43	0.00
762.20	0.00	0.00	0.00	767.60	0.44	0.44	0.00
762.30	0.00	0.00	0.00	767.70	2.07	2.07	0.00
762.40	0.00	0.00	0.00	767.80	5.05	5.05	0.00
762.50	0.00	0.00	0.00	767.90	8.90	8.90	0.00
762.60	0.00	0.00	0.00	768.00	13.46	13.46	0.00
762.70	0.00	0.00	0.00	768.10	18.63	18.63	0.00
762.80	0.00	0.00	0.00	768.20	24.35	24.35	0.00
762.90	0.00	0.00	0.00	768.30	30.57	30.57	0.00
763.00	0.00	0.00	0.00	768.40	37.24	37.24	0.00
763.10	0.00	0.00	0.00	768.50	44.35	44.35	0.00
763.20	0.00	0.00	0.00	768.60	51.87	51.87	0.00
763.30	0.00	0.00	0.00	768.70	56.61	56.61	0.00
763.40	0.00	0.00	0.00	768.80	56.94	56.94	0.00
763.50	0.00	0.00	0.00	768.90	57.27	57.27	0.00
763.60	0.00	0.00	0.00	769.00	57.60	57.60	0.00
763.70	0.00	0.00	0.00	769.10	57.93	57.93	0.00
763.80	0.00	0.00	0.00	769.20	58.26	58.26	0.00
763.90	0.00	0.00	0.00	769.30	58.59	58.59	0.00
764.00	0.00	0.00	0.00	769.40	59.63	58.91	0.72
764.10	0.02	0.02	0.00	769.50	63.02	59.23	3.79
764.20	0.06	0.06	0.00	769.60	67.81	59.55	8.26
764.30	0.10	0.10	0.00	769.70	73.73	59.87	13.86
764.40	0.12	0.12	0.00	769.80	80.63	60.19	20.44
764.50	0.14	0.14	0.00	769.90	88.39	60.50	27.89
764.60	0.16	0.16	0.00	770.00	96.78	60.81	35.96
764.70	0.18	0.18	0.00	770.10	105.62	61.13	44.49
764.80	0.19	0.19	0.00	770.20	115.26	61.44	53.82
764.90	0.21	0.21	0.00	770.30	125.80	61.74	64.06
765.00	0.22	0.22	0.00	770.40	137.17	62.05	75.11
765.10	0.23	0.23	0.00	770.50	149.40	62.36	87.04
765.20	0.25	0.25	0.00	770.60	162.28	62.66	99.62
765.30	0.26	0.26	0.00	770.70	175.76	62.96	112.80

Stage-Discharge for Pond 13-1P: DA-15 SEDIMENT BASIN C (continued)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
770.80	189.81	63.26	126.55
770.90	204.38	63.56	140.82
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 13-1P: DA-15 SEDIMENT BASIN C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	765.40	38,397	121,733
760.10	14,188	1,454	765.50	38,717	125,525
760.20	14,426	2,909	765.60	38,945	129,453
760.30	14,663	4,363	765.70	39,172	133,382
760.40	14,901	5,818	765.80	39,400	137,311
760.50	15,139	7,272	765.90	39,627	141,239
760.60	15,276	8,821	766.00	39,855	145,168
760.70	15,414	10,369	766.10	40,085	149,211
760.80	15,551	11,917	766.20	40,316	153,254
760.90	15,689	13,465	766.30	40,546	157,297
761.00	15,826	15,014	766.40	40,777	161,340
761.10	15,966	16,631	766.50	41,007	165,383
761.20	16,105	18,249	766.60	41,240	169,542
761.30	16,245	19,866	766.70	41,473	173,701
761.40	16,384	21,483	766.80	41,707	177,860
761.50	16,524	23,101	766.90	41,940	182,019
761.60	16,666	24,789	767.00	42,173	186,178
761.70	16,808	26,477	767.10	42,409	190,455
761.80	16,949	28,165	767.20	42,645	194,731
761.90	17,091	29,852	767.30	42,880	199,007
762.00	17,233	31,540	767.40	43,116	203,283
762.10	17,377	33,300	767.50	43,352	207,560
762.20	17,521	35,059	767.60	43,591	211,954
762.30	17,664	36,818	767.70	43,829	216,349
762.40	17,808	38,577	767.80	44,068	220,744
762.50	17,952	40,337	767.90	44,306	225,139
762.60	18,098	42,168	768.00	44,545	229,534
762.70	18,244	44,000	768.10	44,786	234,049
762.80	18,390	45,832	768.20	45,028	238,563
762.90	18,536	47,663	768.30	45,269	243,078
763.00	18,682	49,495	768.40	45,511	247,593
763.10	19,206	51,494	768.50	45,752	252,108
763.20	19,729	53,493	768.60	45,996	256,744
763.30	20,253	55,492	768.70	46,240	261,380
763.40	20,776	57,491	768.80	46,484	266,017
763.50	21,300	59,491	768.90	46,728	270,653
763.60	22,837	62,005	769.00	46,972	275,289
763.70	24,374	64,519	769.10	47,219	280,048
763.80	25,910	67,033	769.20	47,466	284,807
763.90	27,447	69,547	769.30	47,712	289,566
764.00	28,984	72,062	769.40	47,959	294,325
764.10	30,379	75,309	769.50	48,206	299,084
764.20	31,774	78,556	769.60	48,455	303,966
764.30	33,168	81,803	769.70	48,705	308,849
764.40	34,563	85,050	769.80	48,954	313,732
764.50	35,958	88,297	769.90	49,204	318,615
764.60	36,190	91,951	770.00	49,453	323,498
764.70	36,422	95,605	770.10	49,706	328,507
764.80	36,654	99,258	770.20	49,960	333,516
764.90	36,886	102,912	770.30	50,213	338,524
765.00	37,118	106,566	770.40	50,467	343,533
765.10	37,438	110,358	770.50	50,720	348,542
765.20	37,758	114,150	770.60	52,330	354,016
765.30	38,077	117,941	770.70	53,940	359,491

Stage-Area-Storage for Pond 13-1P: DA-15 SEDIMENT BASIN C (continued)

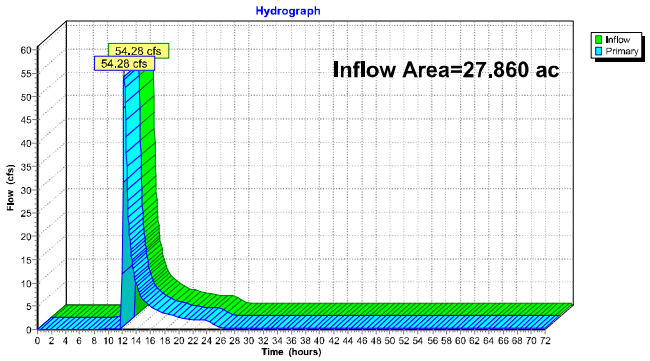
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
770.80	55,550	364,965
770.90	57,160	370,439
771.00	**58,770**	**375,914**

Summary for Link 4-4L: PH II E&S DA-04 (POST ROUTING)

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth > 3.72" for 25-yr event
Inflow = 54.28 cfs @ 12.27 hrs, Volume= 8.636 af
Primary = 54.28 cfs @ 12.27 hrs, Volume= 8.636 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4-4L: PH II E&S DA-04 (POST ROUTING)

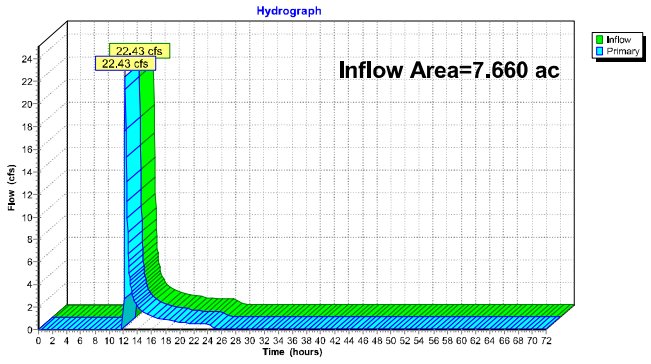


Summary for Link 6-5L: PH II E&S DA-06 (POST ROUTING)

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth > 3.17" for 25-yr event
Inflow = 22.43 cfs @ 12.28 hrs, Volume= 2.026 af
Primary = 22.43 cfs @ 12.28 hrs, Volume= 2.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6-5L: PH II E&S DA-06 (POST ROUTING)

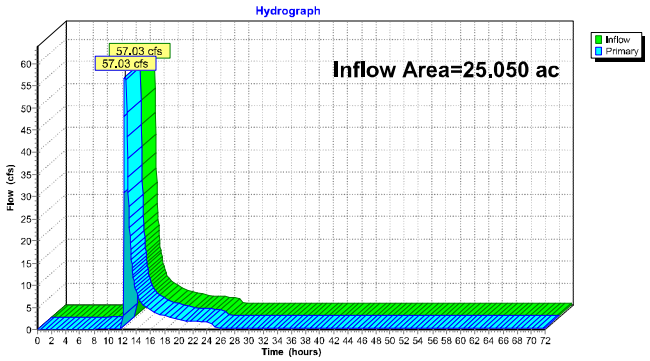


Summary for Link 13-5L: PH II E&S DA-15 (POST ROUTING)

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth > 4.06" for 25-yr event
Inflow = 57.03 cfs @ 12.47 hrs, Volume= 8.481 af
Primary = 57.03 cfs @ 12.47 hrs, Volume= 8.481 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13-5L: PH II E&S DA-15 (POST ROUTING)



DA-01

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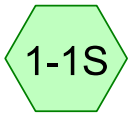
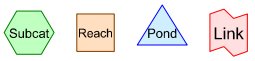


PRE DA-01



Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 1-1S: PRE DA-01

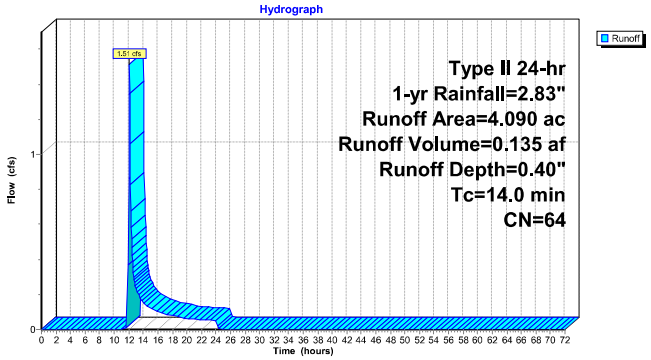
Runoff = 1.51 cfs @ 12.10 hrs, Volume= 0.135 af, Depth= 0.40"
Routed to nonexistent node 1-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	4.090	64	
	4.090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0					Direct Entry,

Subcatchment 1-1S: PRE DA-01



Summary for Subcatchment 1-1S: PRE DA-01

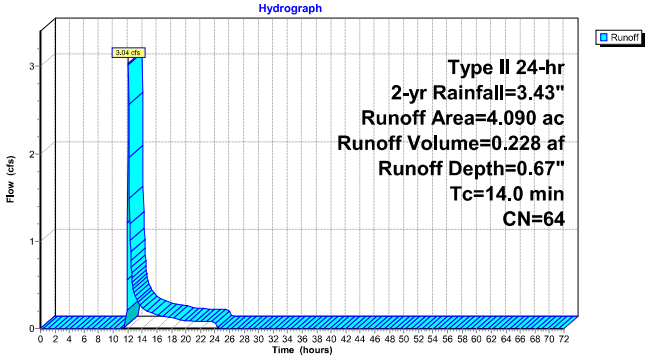
Runoff = 3.04 cfs @ 12.09 hrs, Volume= 0.228 af, Depth= 0.67"
Routed to nonexistent node 1-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	4.090	64	
	4.090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0					Direct Entry,

Subcatchment 1-1S: PRE DA-01



Summary for Subcatchment 1-1S: PRE DA-01

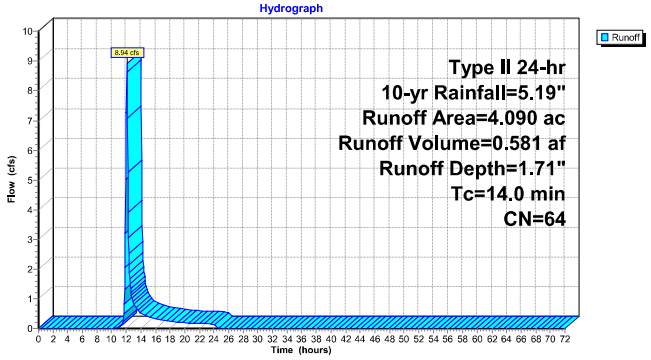
Runoff = 8.94 cfs @ 12.07 hrs, Volume= 0.581 af, Depth= 1.71"
Routed to nonexistent node 1-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	4.090	64	
	4.090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0					Direct Entry,

Subcatchment 1-1S: PRE DA-01



Summary for Subcatchment 1-1S: PRE DA-01

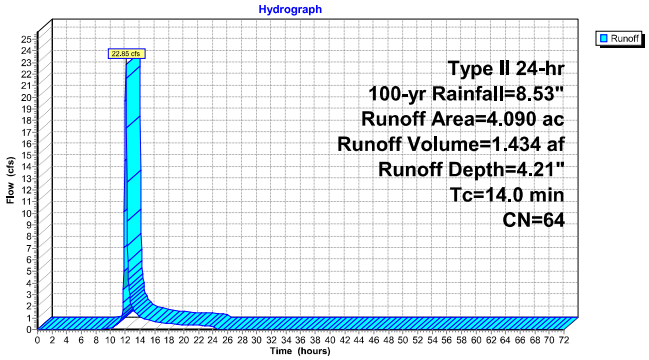
Runoff = 22.85 cfs @ 12.06 hrs, Volume= 1.434 af, Depth= 4.21"
Routed to nonexistent node 1-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 4.090	64	
4.090		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0					Direct Entry,

Subcatchment 1-1S: PRE DA-01



DA-02

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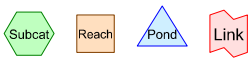
2-1S

PRE DA-02



Routing Diagram for HydroCAD - Appomattox
Prepared by Kimley-Horn & Associates, Printed 10/23/2025
HydroCAD® 10.20-5c s/n 02344 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 2-1S: PRE DA-02

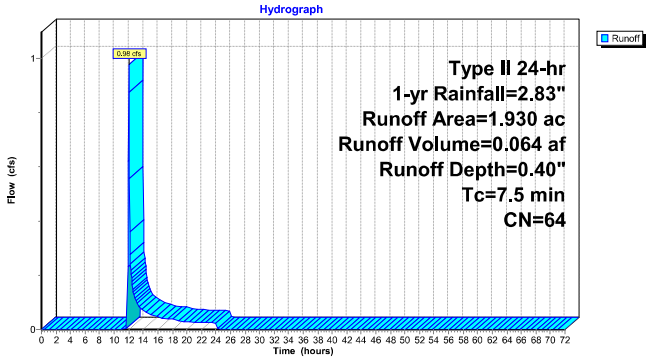
Runoff = 0.98 cfs @ 12.01 hrs, Volume= 0.064 af, Depth= 0.40"
Routed to nonexistent node 2-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

Area (ac)	CN	Description
* 1.930	64	
1.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					Direct Entry,

Subcatchment 2-1S: PRE DA-02



Summary for Subcatchment 2-1S: PRE DA-02

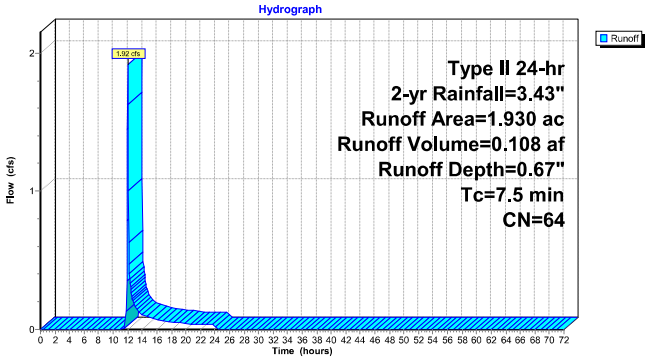
Runoff = 1.92 cfs @ 12.01 hrs, Volume= 0.108 af, Depth= 0.67"
Routed to nonexistent node 2-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	1.930	64	
	1.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					Direct Entry,

Subcatchment 2-1S: PRE DA-02



Summary for Subcatchment 2-1S: PRE DA-02

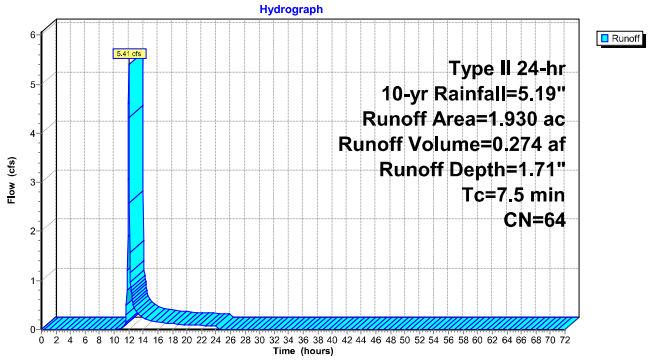
Runoff = 5.41 cfs @ 12.00 hrs, Volume= 0.274 af, Depth= 1.71"
Routed to nonexistent node 2-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	1.930	64	
	1.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					Direct Entry,

Subcatchment 2-1S: PRE DA-02



Summary for Subcatchment 2-1S: PRE DA-02

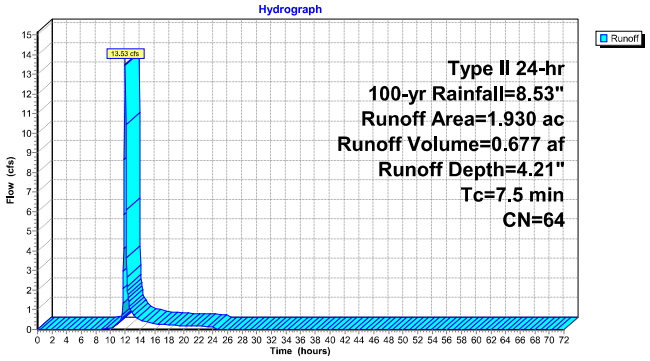
Runoff = 13.53 cfs @ 11.99 hrs, Volume= 0.677 af, Depth= 4.21"
Routed to nonexistent node 2-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	1.930	64	
	1.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5					Direct Entry,

Subcatchment 2-1S: PRE DA-02



DA-03

ONSITE

3-1S

PRE DA-03

Subcat Reach Pond Link

Routing Diagram for HydroCAD - Appomattox
Prepared by Kimley-Horn & Associates, Printed 10/23/2025
HydroCAD® 10.20-5c s/n 02344 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 3-1S: PRE DA-03

[49] Hint: Tc<2dt may require smaller dt

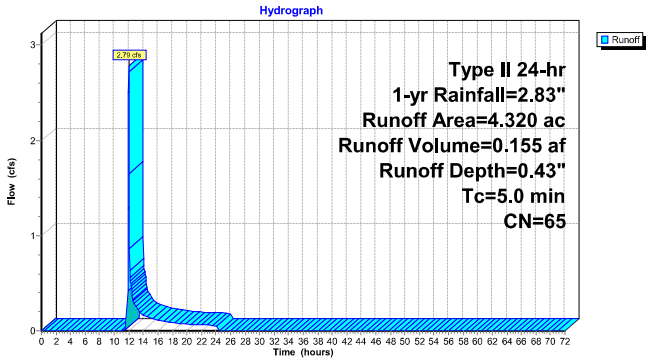
Runoff = 2.79 cfs @ 11.98 hrs, Volume= 0.155 af, Depth= 0.43"
Routed to nonexistent node 3-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	4.320	65	
	4.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3-1S: PRE DA-03



Summary for Subcatchment 3-1S: PRE DA-03

[49] Hint: Tc<2dt may require smaller dt

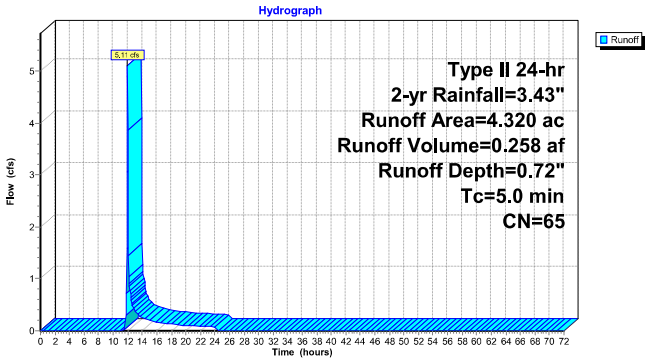
Runoff = 5.11 cfs @ 11.97 hrs, Volume= 0.258 af, Depth= 0.72"
Routed to nonexistent node 3-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	4.320	65	
	4.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3-1S: PRE DA-03



Summary for Subcatchment 3-1S: PRE DA-03

[49] Hint: Tc<2dt may require smaller dt

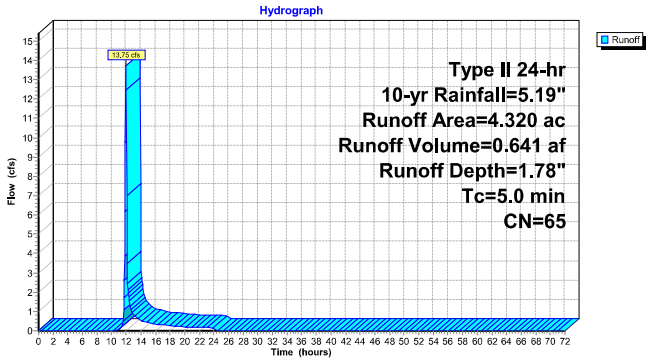
Runoff = 13.75 cfs @ 11.96 hrs, Volume= 0.641 af, Depth= 1.78"
Routed to nonexistent node 3-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	4.320	65	
	4.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3-1S: PRE DA-03



Summary for Subcatchment 3-1S: PRE DA-03

[49] Hint: Tc<2dt may require smaller dt

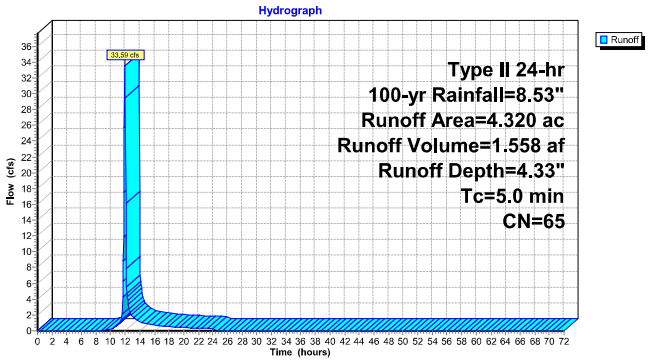
Runoff = 33.59 cfs @ 11.96 hrs, Volume= 1.558 af, Depth= 4.33"
Routed to nonexistent node 3-1L

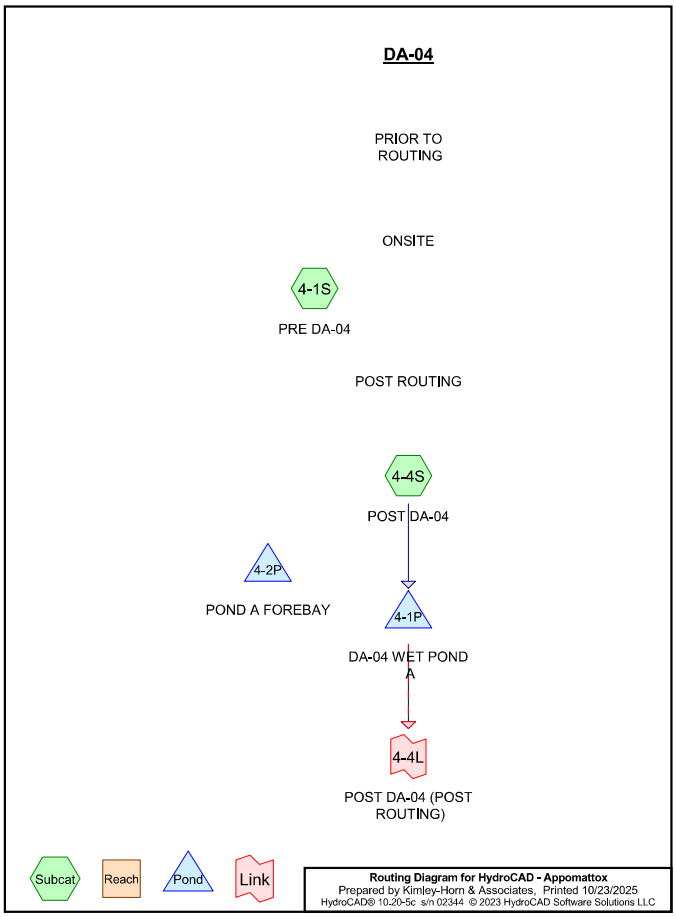
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	4.320	65	
	4.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3-1S: PRE DA-03





Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 4-1S: PRE DA-04

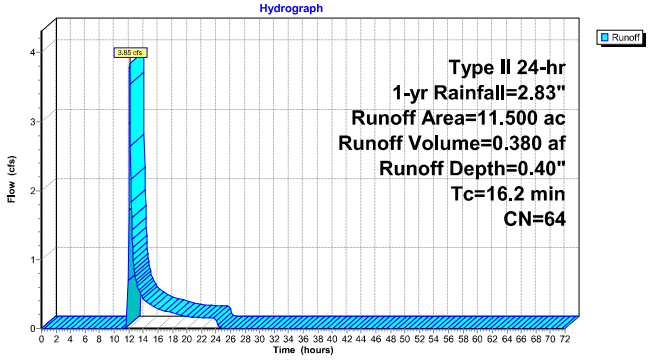
Runoff = 3.85 cfs @ 12.13 hrs, Volume= 0.380 af, Depth= 0.40"
Routed to nonexistent node 4-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	11.500	64	
	11.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2					Direct Entry,

Subcatchment 4-1S: PRE DA-04



Summary for Subcatchment 4-4S: POST DA-04

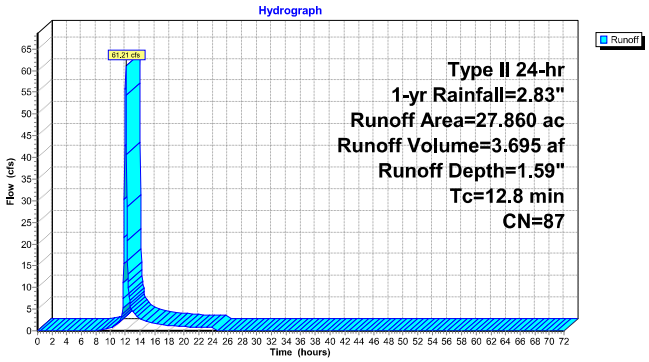
Runoff = 61.21 cfs @ 12.05 hrs, Volume= 3.695 af, Depth= 1.59"
Routed to Pond 4-1P : DA-04 WET POND A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	27.090	87	
*	0.770	75	
	27.860	87	Weighted Average
	27.860		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8					Direct Entry,

Subcatchment 4-4S: POST DA-04



Summary for Pond 4-1P: DA-04 WET POND A

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth = 1.59" for 1-yr event
Inflow = 61.21 cfs @ 12.05 hrs, Volume= 3.695 af
Outflow = 0.32 cfs @ 24.20 hrs, Volume= 1.447 af, Atten= 99%, Lag= 729.3 min
Primary = 0.32 cfs @ 24.20 hrs, Volume= 1.447 af
Routed to Link 4-4L : POST DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4-4L : POST DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 713.19' @ 24.20 hrs Surf.Area= 72,510 sf Storage= 292,876 cf (147,553 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,641.6 min (2,469.0 - 827.4)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

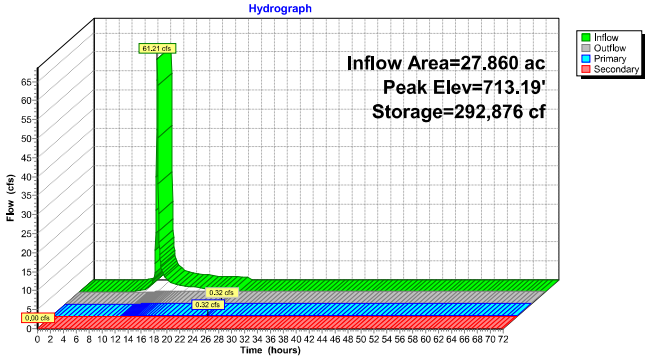
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.32 cfs @ 24.20 hrs HW=713.19' (Free Discharge)
└**1=CULVERT** (Passes 0.32 cfs of 47.50 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.32 cfs @ 6.93 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 4-1P: DA-04 WET POND A



Stage-Discharge for Pond 4-1P: DA-04 WET POND A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00
707.20	0.00	0.00	0.00
707.40	0.00	0.00	0.00
707.60	0.00	0.00	0.00
707.80	0.00	0.00	0.00
708.00	0.00	0.00	0.00
708.20	0.00	0.00	0.00
708.40	0.00	0.00	0.00
708.60	0.00	0.00	0.00
708.80	0.00	0.00	0.00
709.00	0.00	0.00	0.00
709.20	0.00	0.00	0.00
709.40	0.00	0.00	0.00
709.60	0.00	0.00	0.00
709.80	0.00	0.00	0.00
710.00	0.00	0.00	0.00
710.20	0.00	0.00	0.00
710.40	0.00	0.00	0.00
710.60	0.00	0.00	0.00
710.80	0.00	0.00	0.00
711.00	0.00	0.00	0.00
711.20	0.06	0.06	0.00
711.40	0.12	0.12	0.00
711.60	0.15	0.15	0.00
711.80	0.18	0.18	0.00
712.00	0.21	0.21	0.00
712.20	0.23	0.23	0.00
712.40	0.25	0.25	0.00
712.60	0.27	0.27	0.00
712.80	0.29	0.29	0.00
713.00	0.30	0.30	0.00
713.20	0.32	0.32	0.00
713.40	0.33	0.33	0.00
713.60	1.97	1.97	0.00
713.80	8.80	8.80	0.00
714.00	18.54	18.54	0.00
714.20	30.47	30.47	0.00
714.40	44.26	44.26	0.00
714.60	54.27	54.27	0.00
714.80	55.17	55.17	0.00
715.00	56.05	56.05	0.00
715.20	60.63	56.92	3.71
715.40	68.67	57.77	10.90
715.60	79.24	58.61	20.63
715.80	91.41	59.44	31.96
716.00	106.03	60.26	45.76
716.20	123.12	61.07	62.05
716.40	142.16	61.87	80.29
716.60	162.94	62.66	100.28
716.80	186.14	63.43	122.71
717.00	211.49	64.20	147.29
717.20	239.00	64.96	174.04
717.40	268.71	65.71	203.00
717.60	300.64	66.45	234.19
717.80	334.83	67.19	267.64
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 4-1P: DA-04 WET POND A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0	717.40	92,600	633,059
707.20	29,350	5,895	717.60	95,403	651,864
707.40	29,847	11,790	717.80	98,239	671,370
707.60	30,346	17,809	718.00	**101,075**	**690,876**
707.80	30,847	23,954			
708.00	31,348	30,098			
708.20	31,853	36,494			
708.40	32,358	42,890			
708.60	32,864	49,412			
708.80	33,373	56,061			
709.00	33,882	62,711			
709.20	34,395	69,615			
709.40	34,908	76,520			
709.60	35,424	83,554			
709.80	35,942	90,716			
710.00	36,460	97,879			
710.20	41,591	106,453			
710.40	46,722	115,028			
710.60	50,379	124,517			
710.80	52,562	134,920			
711.00	54,746	145,324			
711.20	59,292	157,409			
711.40	63,838	169,495			
711.60	66,471	182,239			
711.80	67,192	195,641			
712.00	67,912	209,044			
712.20	68,641	222,808			
712.40	69,370	236,573			
712.60	70,101	250,520			
712.80	70,832	264,650			
713.00	71,563	278,780			
713.20	72,541	293,337			
713.40	73,518	307,894			
713.60	74,372	322,664			
713.80	75,102	337,648			
714.00	75,832	352,632			
714.20	76,567	367,982			
714.40	77,302	383,332			
714.60	78,039	398,867			
714.80	78,780	414,586			
715.00	79,521	430,305			
715.20	80,267	446,395			
715.40	81,012	462,486			
715.60	81,761	478,764			
715.80	82,512	495,228			
716.00	83,263	511,693			
716.20	84,019	528,535			
716.40	84,776	545,377			
716.60	85,535	562,408			
716.80	86,296	579,629			
717.00	87,058	596,851			
717.20	89,829	614,955			

Summary for Pond 4-2P: POND A FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	12,923 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	1,050	0	0
707.50	1,139	547	547
708.00	1,231	593	1,140
708.50	1,327	640	1,779
709.00	1,426	688	2,468
709.50	1,529	739	3,206
710.00	1,635	791	3,997
710.50	2,015	913	4,910
711.00	2,435	1,113	6,022
711.50	3,391	1,457	7,479
712.00	3,548	1,735	9,214
712.50	3,709	1,814	11,028
713.00	3,873	1,896	12,923

Stage-Discharge for Pond 4-2P: POND A FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
707.00	**0.00**	709.60	0.00	712.20	0.00
707.05	0.00	709.65	0.00	712.25	0.00
707.10	0.00	709.70	0.00	712.30	0.00
707.15	0.00	709.75	0.00	712.35	0.00
707.20	0.00	709.80	0.00	712.40	0.00
707.25	0.00	709.85	0.00	712.45	0.00
707.30	0.00	709.90	0.00	712.50	0.00
707.35	0.00	709.95	0.00	712.55	0.00
707.40	0.00	710.00	0.00	712.60	0.00
707.45	0.00	710.05	0.00	712.65	0.00
707.50	0.00	710.10	0.00	712.70	0.00
707.55	0.00	710.15	0.00	712.75	0.00
707.60	0.00	710.20	0.00	712.80	0.00
707.65	0.00	710.25	0.00	712.85	0.00
707.70	0.00	710.30	0.00	712.90	0.00
707.75	0.00	710.35	0.00	712.95	0.00
707.80	0.00	710.40	0.00	713.00	0.00
707.85	0.00	710.45	0.00		
707.90	0.00	710.50	0.00		
707.95	0.00	710.55	0.00		
708.00	0.00	710.60	0.00		
708.05	0.00	710.65	0.00		
708.10	0.00	710.70	0.00		
708.15	0.00	710.75	0.00		
708.20	0.00	710.80	0.00		
708.25	0.00	710.85	0.00		
708.30	0.00	710.90	0.00		
708.35	0.00	710.95	0.00		
708.40	0.00	711.00	0.00		
708.45	0.00	711.05	0.00		
708.50	0.00	711.10	0.00		
708.55	0.00	711.15	0.00		
708.60	0.00	711.20	0.00		
708.65	0.00	711.25	0.00		
708.70	0.00	711.30	0.00		
708.75	0.00	711.35	0.00		
708.80	0.00	711.40	0.00		
708.85	0.00	711.45	0.00		
708.90	0.00	711.50	0.00		
708.95	0.00	711.55	0.00		
709.00	0.00	711.60	0.00		
709.05	0.00	711.65	0.00		
709.10	0.00	711.70	0.00		
709.15	0.00	711.75	0.00		
709.20	0.00	711.80	0.00		
709.25	0.00	711.85	0.00		
709.30	0.00	711.90	0.00		
709.35	0.00	711.95	0.00		
709.40	0.00	712.00	0.00		
709.45	0.00	712.05	0.00		
709.50	0.00	712.10	0.00		
709.55	0.00	712.15	0.00		

Stage-Area-Storage for Pond 4-2P: POND A FOREBAY

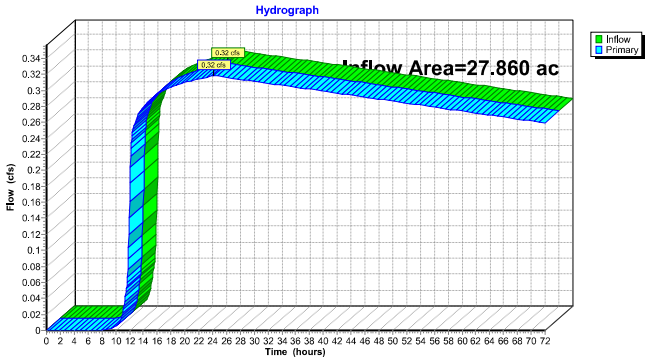
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	1,050	0	712.20	3,612	9,930
707.10	1,068	106	712.30	3,645	10,292
707.20	1,086	214	712.40	3,677	10,658
707.30	1,103	323	712.50	3,709	11,028
707.40	1,121	434	712.60	3,742	11,400
707.50	1,139	547	712.70	3,775	11,776
707.60	1,157	662	712.80	3,807	12,155
707.70	1,176	779	712.90	3,840	12,538
707.80	1,194	897	713.00	**3,873**	**12,923**
707.90	1,213	1,018			
708.00	1,231	1,140			
708.10	1,250	1,264			
708.20	1,269	1,390			
708.30	1,289	1,518			
708.40	1,308	1,648			
708.50	1,327	1,779			
708.60	1,347	1,913			
708.70	1,367	2,049			
708.80	1,386	2,186			
708.90	1,406	2,326			
709.00	1,426	2,468			
709.10	1,447	2,611			
709.20	1,467	2,757			
709.30	1,488	2,905			
709.40	1,508	3,054			
709.50	1,529	3,206			
709.60	1,550	3,360			
709.70	1,571	3,516			
709.80	1,593	3,674			
709.90	1,614	3,835			
710.00	1,635	3,997			
710.10	1,711	4,165			
710.20	1,787	4,339			
710.30	1,863	4,522			
710.40	1,939	4,712			
710.50	2,015	4,910			
710.60	2,099	5,115			
710.70	2,183	5,330			
710.80	2,267	5,552			
710.90	2,351	5,783			
711.00	2,435	6,022			
711.10	2,626	6,275			
711.20	2,817	6,547			
711.30	3,009	6,839			
711.40	3,200	7,149			
711.50	3,391	7,479			
711.60	3,422	7,819			
711.70	3,454	8,163			
711.80	3,485	8,510			
711.90	3,517	8,860			
712.00	3,548	9,214			
712.10	3,580	9,570			

Summary for Link 4-4L: POST DA-04 (POST ROUTING)

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth > 0.62" for 1-yr event
Inflow = 0.32 cfs @ 24.20 hrs, Volume= 1.447 af
Primary = 0.32 cfs @ 24.20 hrs, Volume= 1.447 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4-4L: POST DA-04 (POST ROUTING)



Summary for Subcatchment 4-1S: PRE DA-04

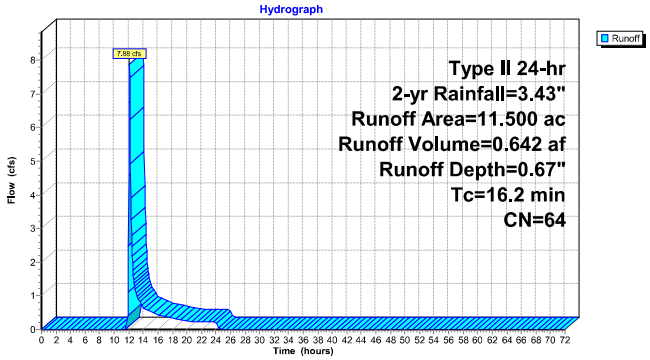
Runoff = 7.88 cfs @ 12.11 hrs, Volume= 0.642 af, Depth= 0.67"
Routed to nonexistent node 4-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

Area (ac)	CN	Description
* 11.500	64	
11.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2					**Direct Entry,**

Subcatchment 4-1S: PRE DA-04



Summary for Subcatchment 4-4S: POST DA-04

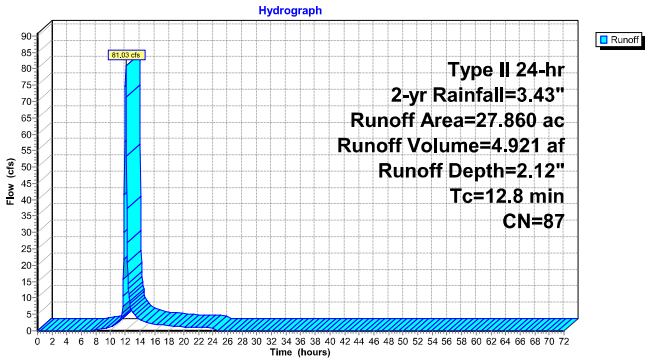
Runoff = 81.03 cfs @ 12.05 hrs, Volume= 4.921 af, Depth= 2.12"
Routed to Pond 4-1P : DA-04 WET POND A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

Area (ac)	CN	Description
* 27.090	87	
* 0.770	75	
27.860	87	Weighted Average
27.860		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8					**Direct Entry,**

Subcatchment 4-4S: POST DA-04



Summary for Pond 4-1P: DA-04 WET POND A

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth = 2.12" for 2-yr event
Inflow = 81.03 cfs @ 12.05 hrs, Volume= 4.921 af
Outflow = 1.50 cfs @ 18.36 hrs, Volume= 2.221 af, Atten= 98%, Lag= 378.8 min
Primary = 1.50 cfs @ 18.36 hrs, Volume= 2.221 af
Routed to Link 4-4L : POST DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4-4L : POST DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 713.57' @ 18.36 hrs Surf.Area= 74,266 sf Storage= 320,483 cf (175,160 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,280.1 min (2,099.3 - 819.2)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

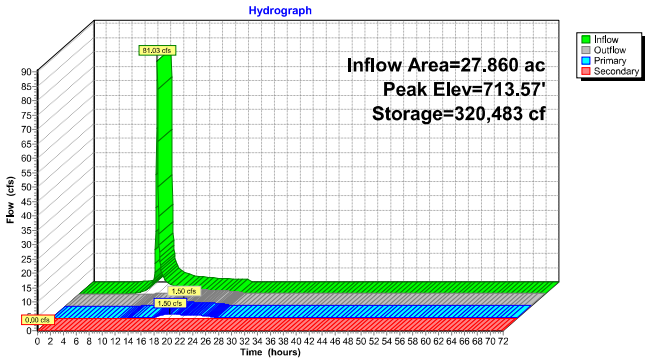
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.32 cfs @ 18.36 hrs HW=713.57' (Free Discharge)
└**1=CULVERT** (Passes 1.32 cfs of 49.41 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.35 cfs @ 7.54 fps)
└**3=TOP OF RISER** (Weir Controls 0.97 cfs @ 0.87 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 4-1P: DA-04 WET POND A



Stage-Discharge for Pond 4-1P: DA-04 WET POND A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00
707.20	0.00	0.00	0.00
707.40	0.00	0.00	0.00
707.60	0.00	0.00	0.00
707.80	0.00	0.00	0.00
708.00	0.00	0.00	0.00
708.20	0.00	0.00	0.00
708.40	0.00	0.00	0.00
708.60	0.00	0.00	0.00
708.80	0.00	0.00	0.00
709.00	0.00	0.00	0.00
709.20	0.00	0.00	0.00
709.40	0.00	0.00	0.00
709.60	0.00	0.00	0.00
709.80	0.00	0.00	0.00
710.00	0.00	0.00	0.00
710.20	0.00	0.00	0.00
710.40	0.00	0.00	0.00
710.60	0.00	0.00	0.00
710.80	0.00	0.00	0.00
711.00	0.00	0.00	0.00
711.20	0.06	0.06	0.00
711.40	0.12	0.12	0.00
711.60	0.15	0.15	0.00
711.80	0.18	0.18	0.00
712.00	0.21	0.21	0.00
712.20	0.23	0.23	0.00
712.40	0.25	0.25	0.00
712.60	0.27	0.27	0.00
712.80	0.29	0.29	0.00
713.00	0.30	0.30	0.00
713.20	0.32	0.32	0.00
713.40	0.33	0.33	0.00
713.60	1.97	1.97	0.00
713.80	8.80	8.80	0.00
714.00	18.54	18.54	0.00
714.20	30.47	30.47	0.00
714.40	44.26	44.26	0.00
714.60	54.27	54.27	0.00
714.80	55.17	55.17	0.00
715.00	56.05	56.05	0.00
715.20	60.63	56.92	3.71
715.40	68.67	57.77	10.90
715.60	79.24	58.61	20.63
715.80	91.41	59.44	31.96
716.00	106.03	60.26	45.76
716.20	123.12	61.07	62.05
716.40	142.16	61.87	80.29
716.60	162.94	62.66	100.28
716.80	186.14	63.43	122.71
717.00	211.49	64.20	147.29
717.20	239.00	64.96	174.04
717.40	268.71	65.71	203.00
717.60	300.64	66.45	234.19
717.80	334.83	67.19	267.64
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 4-1P: DA-04 WET POND A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0
707.20	29,350	5,895
707.40	29,847	11,790
707.60	30,346	17,809
707.80	30,847	23,954
708.00	31,348	30,098
708.20	31,853	36,494
708.40	32,358	42,890
708.60	32,864	49,412
708.80	33,373	56,061
709.00	33,882	62,711
709.20	34,395	69,615
709.40	34,908	76,520
709.60	35,424	83,554
709.80	35,942	90,716
710.00	36,460	97,879
710.20	41,591	106,453
710.40	46,722	115,028
710.60	50,379	124,517
710.80	52,562	134,920
711.00	54,746	145,324
711.20	59,292	157,409
711.40	63,838	169,495
711.60	66,471	182,239
711.80	67,192	195,641
712.00	67,912	209,044
712.20	68,641	222,808
712.40	69,370	236,573
712.60	70,101	250,520
712.80	70,832	264,650
713.00	71,563	278,780
713.20	72,541	293,337
713.40	73,518	307,894
713.60	74,372	322,664
713.80	75,102	337,648
714.00	75,832	352,632
714.20	76,567	367,982
714.40	77,302	383,332
714.60	78,039	398,867
714.80	78,780	414,586
715.00	79,521	430,305
715.20	80,267	446,395
715.40	81,012	462,486
715.60	81,761	478,764
715.80	82,512	495,228
716.00	83,263	511,693
716.20	84,019	528,535
716.40	84,776	545,377
716.60	85,535	562,408
716.80	86,296	579,629
717.00	87,058	596,851
717.20	89,829	614,955
717.40	92,600	633,059
717.60	95,403	651,864
717.80	98,239	671,370
718.00	**101,075**	**690,876**

Summary for Pond 4-2P: POND A FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	12,923 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	1,050	0	0
707.50	1,139	547	547
708.00	1,231	593	1,140
708.50	1,327	640	1,779
709.00	1,426	688	2,468
709.50	1,529	739	3,206
710.00	1,635	791	3,997
710.50	2,015	913	4,910
711.00	2,435	1,113	6,022
711.50	3,391	1,457	7,479
712.00	3,548	1,735	9,214
712.50	3,709	1,814	11,028
713.00	3,873	1,896	12,923

Stage-Discharge for Pond 4-2P: POND A FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
707.00	**0.00**	709.60	0.00	712.20	0.00
707.05	0.00	709.65	0.00	712.25	0.00
707.10	0.00	709.70	0.00	712.30	0.00
707.15	0.00	709.75	0.00	712.35	0.00
707.20	0.00	709.80	0.00	712.40	0.00
707.25	0.00	709.85	0.00	712.45	0.00
707.30	0.00	709.90	0.00	712.50	0.00
707.35	0.00	709.95	0.00	712.55	0.00
707.40	0.00	710.00	0.00	712.60	0.00
707.45	0.00	710.05	0.00	712.65	0.00
707.50	0.00	710.10	0.00	712.70	0.00
707.55	0.00	710.15	0.00	712.75	0.00
707.60	0.00	710.20	0.00	712.80	0.00
707.65	0.00	710.25	0.00	712.85	0.00
707.70	0.00	710.30	0.00	712.90	0.00
707.75	0.00	710.35	0.00	712.95	0.00
707.80	0.00	710.40	0.00	713.00	0.00
707.85	0.00	710.45	0.00		
707.90	0.00	710.50	0.00		
707.95	0.00	710.55	0.00		
708.00	0.00	710.60	0.00		
708.05	0.00	710.65	0.00		
708.10	0.00	710.70	0.00		
708.15	0.00	710.75	0.00		
708.20	0.00	710.80	0.00		
708.25	0.00	710.85	0.00		
708.30	0.00	710.90	0.00		
708.35	0.00	710.95	0.00		
708.40	0.00	711.00	0.00		
708.45	0.00	711.05	0.00		
708.50	0.00	711.10	0.00		
708.55	0.00	711.15	0.00		
708.60	0.00	711.20	0.00		
708.65	0.00	711.25	0.00		
708.70	0.00	711.30	0.00		
708.75	0.00	711.35	0.00		
708.80	0.00	711.40	0.00		
708.85	0.00	711.45	0.00		
708.90	0.00	711.50	0.00		
708.95	0.00	711.55	0.00		
709.00	0.00	711.60	0.00		
709.05	0.00	711.65	0.00		
709.10	0.00	711.70	0.00		
709.15	0.00	711.75	0.00		
709.20	0.00	711.80	0.00		
709.25	0.00	711.85	0.00		
709.30	0.00	711.90	0.00		
709.35	0.00	711.95	0.00		
709.40	0.00	712.00	0.00		
709.45	0.00	712.05	0.00		
709.50	0.00	712.10	0.00		
709.55	0.00	712.15	0.00		

Stage-Area-Storage for Pond 4-2P: POND A FOREBAY

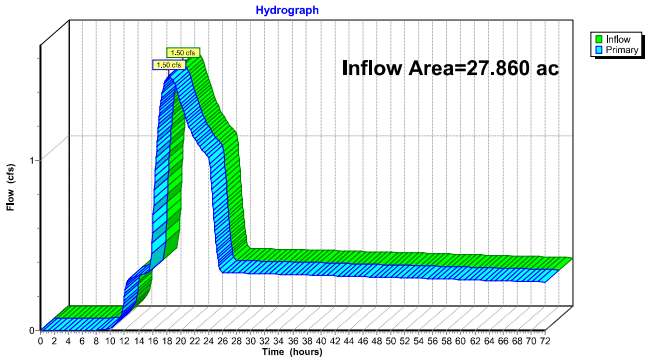
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	1,050	0	712.20	3,612	9,930
707.10	1,068	106	712.30	3,645	10,292
707.20	1,086	214	712.40	3,677	10,658
707.30	1,103	323	712.50	3,709	11,028
707.40	1,121	434	712.60	3,742	11,400
707.50	1,139	547	712.70	3,775	11,776
707.60	1,157	662	712.80	3,807	12,155
707.70	1,176	779	712.90	3,840	12,538
707.80	1,194	897	713.00	**3,873**	**12,923**
707.90	1,213	1,018			
708.00	1,231	1,140			
708.10	1,250	1,264			
708.20	1,269	1,390			
708.30	1,289	1,518			
708.40	1,308	1,648			
708.50	1,327	1,779			
708.60	1,347	1,913			
708.70	1,367	2,049			
708.80	1,386	2,186			
708.90	1,406	2,326			
709.00	1,426	2,468			
709.10	1,447	2,611			
709.20	1,467	2,757			
709.30	1,488	2,905			
709.40	1,508	3,054			
709.50	1,529	3,206			
709.60	1,550	3,360			
709.70	1,571	3,516			
709.80	1,593	3,674			
709.90	1,614	3,835			
710.00	1,635	3,997			
710.10	1,711	4,165			
710.20	1,787	4,339			
710.30	1,863	4,522			
710.40	1,939	4,712			
710.50	2,015	4,910			
710.60	2,099	5,115			
710.70	2,183	5,330			
710.80	2,267	5,552			
710.90	2,351	5,783			
711.00	2,435	6,022			
711.10	2,626	6,275			
711.20	2,817	6,547			
711.30	3,009	6,839			
711.40	3,200	7,149			
711.50	3,391	7,479			
711.60	3,422	7,819			
711.70	3,454	8,163			
711.80	3,485	8,510			
711.90	3,517	8,860			
712.00	3,548	9,214			
712.10	3,580	9,570			

Summary for Link 4-4L: POST DA-04 (POST ROUTING)

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth > 0.96" for 2-yr event
Inflow = 1.50 cfs @ 18.36 hrs, Volume= 2.221 af
Primary = 1.50 cfs @ 18.36 hrs, Volume= 2.221 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4-4L: POST DA-04 (POST ROUTING)



Summary for Subcatchment 4-1S: PRE DA-04

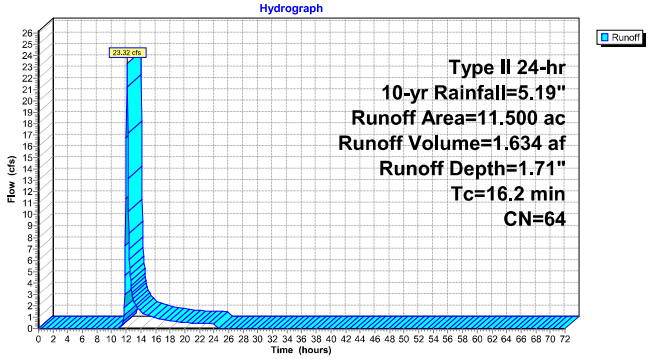
Runoff = 23.32 cfs @ 12.10 hrs, Volume= 1.634 af, Depth= 1.71"
Routed to nonexistent node 4-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

Area (ac)	CN	Description
* 11.500	64	
11.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2					**Direct Entry,**

Subcatchment 4-1S: PRE DA-04



Summary for Subcatchment 4-4S: POST DA-04

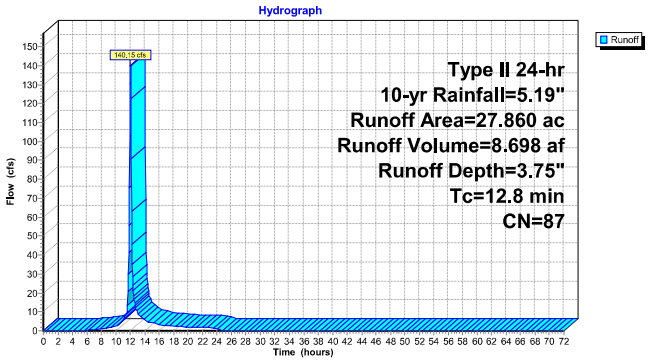
Runoff = 140.15 cfs @ 12.04 hrs, Volume= 8.698 af, Depth= 3.75"
Routed to Pond 4-1P : DA-04 WET POND A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	27.090	87	
*	0.770	75	
	27.860	87	Weighted Average
	27.860		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8					Direct Entry,

Subcatchment 4-4S: POST DA-04



Summary for Pond 4-1P: DA-04 WET POND A

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth = 3.75" for 10-yr event
Inflow = 140.15 cfs @ 12.04 hrs, Volume= 8.698 af
Outflow = 22.68 cfs @ 12.42 hrs, Volume= 5.985 af, Atten= 84%, Lag= 22.9 min
Primary = 22.68 cfs @ 12.42 hrs, Volume= 5.985 af
Routed to Link 4-4L : POST DA-04 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 4-4L : POST DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 714.07' @ 12.42 hrs Surf.Area= 76,097 sf Storage= 358,174 cf (212,851 cf above start)

Plug-Flow detention time= 1,311.5 min calculated for 2.649 af (30% of inflow)
Center-of-Mass det. time= 529.5 min (1,332.5 - 803.0)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

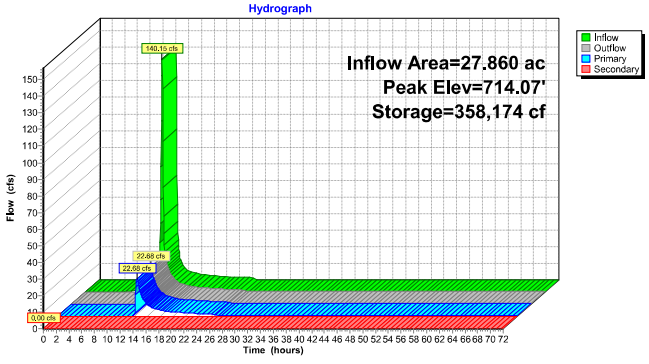
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=22.54 cfs @ 12.42 hrs HW=714.07' (Free Discharge)
└**1=CULVERT** (Passes 22.54 cfs of 51.83 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.38 cfs @ 8.27 fps)
└**3=TOP OF RISER** (Weir Controls 22.16 cfs @ 2.47 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=711.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 4-1P: DA-04 WET POND A



Stage-Discharge for Pond 4-1P: DA-04 WET POND A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00	717.40	268.71	65.71	203.00
707.20	0.00	0.00	0.00	717.60	300.64	66.45	234.19
707.40	0.00	0.00	0.00	717.80	334.83	67.19	267.64
707.60	0.00	0.00	0.00	718.00	**371.29**	**67.91**	**303.38**
707.80	0.00	0.00	0.00				
708.00	0.00	0.00	0.00				
708.20	0.00	0.00	0.00				
708.40	0.00	0.00	0.00				
708.60	0.00	0.00	0.00				
708.80	0.00	0.00	0.00				
709.00	0.00	0.00	0.00				
709.20	0.00	0.00	0.00				
709.40	0.00	0.00	0.00				
709.60	0.00	0.00	0.00				
709.80	0.00	0.00	0.00				
710.00	0.00	0.00	0.00				
710.20	0.00	0.00	0.00				
710.40	0.00	0.00	0.00				
710.60	0.00	0.00	0.00				
710.80	0.00	0.00	0.00				
711.00	0.00	0.00	0.00				
711.20	0.06	0.06	0.00				
711.40	0.12	0.12	0.00				
711.60	0.15	0.15	0.00				
711.80	0.18	0.18	0.00				
712.00	0.21	0.21	0.00				
712.20	0.23	0.23	0.00				
712.40	0.25	0.25	0.00				
712.60	0.27	0.27	0.00				
712.80	0.29	0.29	0.00				
713.00	0.30	0.30	0.00				
713.20	0.32	0.32	0.00				
713.40	0.33	0.33	0.00				
713.60	1.97	1.97	0.00				
713.80	8.80	8.80	0.00				
714.00	18.54	18.54	0.00				
714.20	30.47	30.47	0.00				
714.40	44.26	44.26	0.00				
714.60	54.27	54.27	0.00				
714.80	55.17	55.17	0.00				
715.00	56.05	56.05	0.00				
715.20	60.63	56.92	3.71				
715.40	68.67	57.77	10.90				
715.60	79.24	58.61	20.63				
715.80	91.41	59.44	31.96				
716.00	106.03	60.26	45.76				
716.20	123.12	61.07	62.05				
716.40	142.16	61.87	80.29				
716.60	162.94	62.66	100.28				
716.80	186.14	63.43	122.71				
717.00	211.49	64.20	147.29				
717.20	239.00	64.96	174.04				

Stage-Area-Storage for Pond 4-1P: DA-04 WET POND A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0	717.40	92,600	633,059
707.20	29,350	5,895	717.60	95,403	651,864
707.40	29,847	11,790	717.80	98,239	671,370
707.60	30,346	17,809	718.00	**101,075**	**690,876**
707.80	30,847	23,954			
708.00	31,348	30,098			
708.20	31,853	36,494			
708.40	32,358	42,890			
708.60	32,864	49,412			
708.80	33,373	56,061			
709.00	33,882	62,711			
709.20	34,395	69,615			
709.40	34,908	76,520			
709.60	35,424	83,554			
709.80	35,942	90,716			
710.00	36,460	97,879			
710.20	41,591	106,453			
710.40	46,722	115,028			
710.60	50,379	124,517			
710.80	52,562	134,920			
711.00	54,746	145,324			
711.20	59,292	157,409			
711.40	63,838	169,495			
711.60	66,471	182,239			
711.80	67,192	195,641			
712.00	67,912	209,044			
712.20	68,641	222,808			
712.40	69,370	236,573			
712.60	70,101	250,520			
712.80	70,832	264,650			
713.00	71,563	278,780			
713.20	72,541	293,337			
713.40	73,518	307,894			
713.60	74,372	322,664			
713.80	75,102	337,648			
714.00	75,832	352,632			
714.20	76,567	367,982			
714.40	77,302	383,332			
714.60	78,039	398,867			
714.80	78,780	414,586			
715.00	79,521	430,305			
715.20	80,267	446,395			
715.40	81,012	462,486			
715.60	81,761	478,764			
715.80	82,512	495,228			
716.00	83,263	511,693			
716.20	84,019	528,535			
716.40	84,776	545,377			
716.60	85,535	562,408			
716.80	86,296	579,629			
717.00	87,058	596,851			
717.20	89,829	614,955			

Summary for Pond 4-2P: POND A FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	12,923 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	1,050	0	0
707.50	1,139	547	547
708.00	1,231	593	1,140
708.50	1,327	640	1,779
709.00	1,426	688	2,468
709.50	1,529	739	3,206
710.00	1,635	791	3,997
710.50	2,015	913	4,910
711.00	2,435	1,113	6,022
711.50	3,391	1,457	7,479
712.00	3,548	1,735	9,214
712.50	3,709	1,814	11,028
713.00	3,873	1,896	12,923

Stage-Discharge for Pond 4-2P: POND A FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
707.00	**0.00**	709.60	0.00	712.20	0.00
707.05	0.00	709.65	0.00	712.25	0.00
707.10	0.00	709.70	0.00	712.30	0.00
707.15	0.00	709.75	0.00	712.35	0.00
707.20	0.00	709.80	0.00	712.40	0.00
707.25	0.00	709.85	0.00	712.45	0.00
707.30	0.00	709.90	0.00	712.50	0.00
707.35	0.00	709.95	0.00	712.55	0.00
707.40	0.00	710.00	0.00	712.60	0.00
707.45	0.00	710.05	0.00	712.65	0.00
707.50	0.00	710.10	0.00	712.70	0.00
707.55	0.00	710.15	0.00	712.75	0.00
707.60	0.00	710.20	0.00	712.80	0.00
707.65	0.00	710.25	0.00	712.85	0.00
707.70	0.00	710.30	0.00	712.90	0.00
707.75	0.00	710.35	0.00	712.95	0.00
707.80	0.00	710.40	0.00	713.00	0.00
707.85	0.00	710.45	0.00		
707.90	0.00	710.50	0.00		
707.95	0.00	710.55	0.00		
708.00	0.00	710.60	0.00		
708.05	0.00	710.65	0.00		
708.10	0.00	710.70	0.00		
708.15	0.00	710.75	0.00		
708.20	0.00	710.80	0.00		
708.25	0.00	710.85	0.00		
708.30	0.00	710.90	0.00		
708.35	0.00	710.95	0.00		
708.40	0.00	711.00	0.00		
708.45	0.00	711.05	0.00		
708.50	0.00	711.10	0.00		
708.55	0.00	711.15	0.00		
708.60	0.00	711.20	0.00		
708.65	0.00	711.25	0.00		
708.70	0.00	711.30	0.00		
708.75	0.00	711.35	0.00		
708.80	0.00	711.40	0.00		
708.85	0.00	711.45	0.00		
708.90	0.00	711.50	0.00		
708.95	0.00	711.55	0.00		
709.00	0.00	711.60	0.00		
709.05	0.00	711.65	0.00		
709.10	0.00	711.70	0.00		
709.15	0.00	711.75	0.00		
709.20	0.00	711.80	0.00		
709.25	0.00	711.85	0.00		
709.30	0.00	711.90	0.00		
709.35	0.00	711.95	0.00		
709.40	0.00	712.00	0.00		
709.45	0.00	712.05	0.00		
709.50	0.00	712.10	0.00		
709.55	0.00	712.15	0.00		

Stage-Area-Storage for Pond 4-2P: POND A FOREBAY

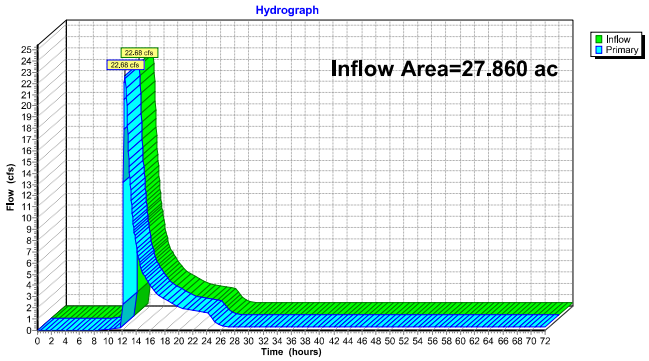
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	1,050	0	712.20	3,612	9,930
707.10	1,068	106	712.30	3,645	10,292
707.20	1,086	214	712.40	3,677	10,658
707.30	1,103	323	712.50	3,709	11,028
707.40	1,121	434	712.60	3,742	11,400
707.50	1,139	547	712.70	3,775	11,776
707.60	1,157	662	712.80	3,807	12,155
707.70	1,176	779	712.90	3,840	12,538
707.80	1,194	897	713.00	**3,873**	**12,923**
707.90	1,213	1,018			
708.00	1,231	1,140			
708.10	1,250	1,264			
708.20	1,269	1,390			
708.30	1,289	1,518			
708.40	1,308	1,648			
708.50	1,327	1,779			
708.60	1,347	1,913			
708.70	1,367	2,049			
708.80	1,386	2,186			
708.90	1,406	2,326			
709.00	1,426	2,468			
709.10	1,447	2,611			
709.20	1,467	2,757			
709.30	1,488	2,905			
709.40	1,508	3,054			
709.50	1,529	3,206			
709.60	1,550	3,360			
709.70	1,571	3,516			
709.80	1,593	3,674			
709.90	1,614	3,835			
710.00	1,635	3,997			
710.10	1,711	4,165			
710.20	1,787	4,339			
710.30	1,863	4,522			
710.40	1,939	4,712			
710.50	2,015	4,910			
710.60	2,099	5,115			
710.70	2,183	5,330			
710.80	2,267	5,552			
710.90	2,351	5,783			
711.00	2,435	6,022			
711.10	2,626	6,275			
711.20	2,817	6,547			
711.30	3,009	6,839			
711.40	3,200	7,149			
711.50	3,391	7,479			
711.60	3,422	7,819			
711.70	3,454	8,163			
711.80	3,485	8,510			
711.90	3,517	8,860			
712.00	3,548	9,214			
712.10	3,580	9,570			

Summary for Link 4-4L: POST DA-04 (POST ROUTING)

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth > 2.58" for 10-yr event
Inflow = 22.68 cfs @ 12.42 hrs, Volume= 5.985 af
Primary = 22.68 cfs @ 12.42 hrs, Volume= 5.985 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4-4L: POST DA-04 (POST ROUTING)



Summary for Subcatchment 4-1S: PRE DA-04

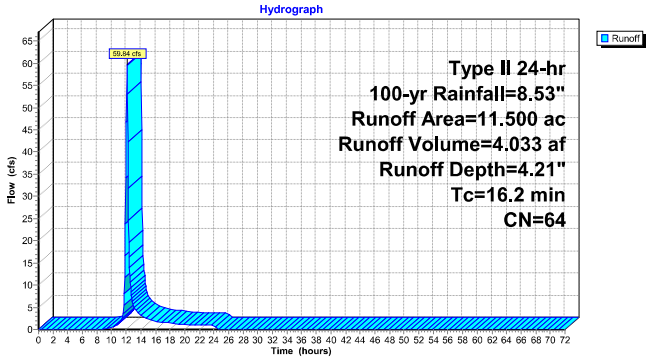
Runoff = 59.84 cfs @ 12.09 hrs, Volume= 4.033 af, Depth= 4.21"
Routed to nonexistent node 4-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 11.500	64	
11.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2					**Direct Entry,**

Subcatchment 4-1S: PRE DA-04



Summary for Subcatchment 4-4S: POST DA-04

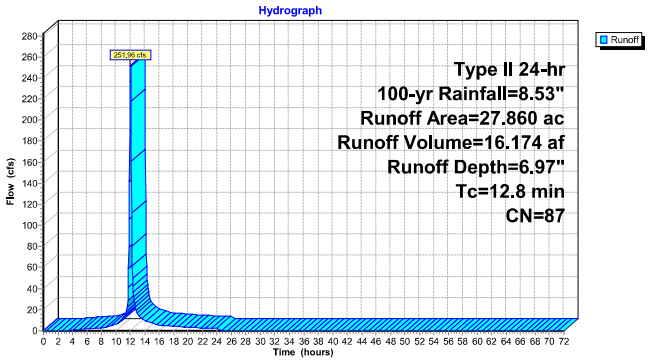
Runoff = 251.96 cfs @ 12.04 hrs, Volume= 16.174 af, Depth= 6.97"
Routed to Pond 4-1P : DA-04 WET POND A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 27.090	87	
* 0.770	75	
27.860	87	Weighted Average
27.860		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8					**Direct Entry,**

Subcatchment 4-4S: POST DA-04



Summary for Pond 4-1P: DA-04 WET POND A

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth = 6.97" for 100-yr event
Inflow = 251.96 cfs @ 12.04 hrs, Volume= 16.174 af
Outflow = 86.32 cfs @ 12.25 hrs, Volume= 13.449 af, Atten= 66%, Lag= 12.3 min
Primary = 59.11 cfs @ 12.25 hrs, Volume= 12.676 af
Routed to Link 4-4L : POST DA-04 (POST ROUTING)
Secondary = 27.21 cfs @ 12.25 hrs, Volume= 0.773 af
Routed to Link 4-4L : POST DA-04 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 711.00' Surf.Area= 54,746 sf Storage= 145,324 cf
Peak Elev= 715.72' @ 12.25 hrs Surf.Area= 82,207 sf Storage= 488,547 cf (343,224 cf above start)

Plug-Flow detention time= 478.8 min calculated for 10.113 af (63% of inflow)
Center-of-Mass det. time= 269.0 min (1,054.9 - 785.9)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	690,876 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	28,854	0	0
707.50	30,095	14,737	14,737
708.00	31,348	15,361	30,098
708.50	32,610	15,990	46,088
709.00	33,882	16,623	62,711
709.50	35,165	17,262	79,972
710.00	36,460	17,906	97,879
710.50	49,287	21,437	119,315
711.00	54,746	26,008	145,324
711.50	66,111	30,214	175,538
712.00	67,912	33,506	209,044
712.50	69,735	34,412	243,455
713.00	71,563	35,325	278,780
713.50	74,007	36,393	315,172
714.00	75,832	37,460	352,632
714.50	77,669	38,375	391,007
715.00	79,521	39,298	430,305
715.50	81,385	40,227	470,531
716.00	83,263	41,162	511,693
716.50	85,154	42,104	553,798
717.00	87,058	43,053	596,851
717.50	93,985	45,261	642,111
718.00	101,075	48,765	690,876

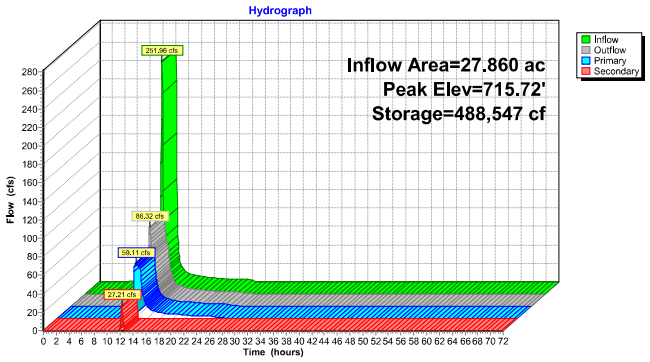
Device	Routing	Invert	Outlet Devices
#1	Primary	707.00'	**30.0" Round CULVERT** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 707.00' / 706.09' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	711.00'	**2.9" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	713.50'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	715.00'	**15.0' long + 3.0 '/' SideZ x 29.3' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=59.10 cfs @ 12.25 hrs HW=715.72' (Free Discharge)
└**1=CULVERT** (Barrel Controls 59.10 cfs @ 12.04 fps)
└**2=1-YR CONTROL** (Passes < 0.47 cfs potential flow)
└**3=TOP OF RISER** (Passes < 140.76 cfs potential flow)

Secondary OutFlow Max=27.04 cfs @ 12.25 hrs HW=715.72' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Weir Controls 27.04 cfs @ 2.20 fps)

Pond 4-1P: DA-04 WET POND A



Stage-Discharge for Pond 4-1P: DA-04 WET POND A

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
707.00	0.00	0.00	0.00
707.20	0.00	0.00	0.00
707.40	0.00	0.00	0.00
707.60	0.00	0.00	0.00
707.80	0.00	0.00	0.00
708.00	0.00	0.00	0.00
708.20	0.00	0.00	0.00
708.40	0.00	0.00	0.00
708.60	0.00	0.00	0.00
708.80	0.00	0.00	0.00
709.00	0.00	0.00	0.00
709.20	0.00	0.00	0.00
709.40	0.00	0.00	0.00
709.60	0.00	0.00	0.00
709.80	0.00	0.00	0.00
710.00	0.00	0.00	0.00
710.20	0.00	0.00	0.00
710.40	0.00	0.00	0.00
710.60	0.00	0.00	0.00
710.80	0.00	0.00	0.00
711.00	0.00	0.00	0.00
711.20	0.06	0.06	0.00
711.40	0.12	0.12	0.00
711.60	0.15	0.15	0.00
711.80	0.18	0.18	0.00
712.00	0.21	0.21	0.00
712.20	0.23	0.23	0.00
712.40	0.25	0.25	0.00
712.60	0.27	0.27	0.00
712.80	0.29	0.29	0.00
713.00	0.30	0.30	0.00
713.20	0.32	0.32	0.00
713.40	0.33	0.33	0.00
713.60	1.97	1.97	0.00
713.80	8.80	8.80	0.00
714.00	18.54	18.54	0.00
714.20	30.47	30.47	0.00
714.40	44.26	44.26	0.00
714.60	54.27	54.27	0.00
714.80	55.17	55.17	0.00
715.00	56.05	56.05	0.00
715.20	60.63	56.92	3.71
715.40	68.67	57.77	10.90
715.60	79.24	58.61	20.63
715.80	91.41	59.44	31.96
716.00	106.03	60.26	45.76
716.20	123.12	61.07	62.05
716.40	142.16	61.87	80.29
716.60	162.94	62.66	100.28
716.80	186.14	63.43	122.71
717.00	211.49	64.20	147.29
717.20	239.00	64.96	174.04
717.40	268.71	65.71	203.00
717.60	300.64	66.45	234.19
717.80	334.83	67.19	267.64
718.00	**371.29**	**67.91**	**303.38**

Stage-Area-Storage for Pond 4-1P: DA-04 WET POND A

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	28,854	0
707.20	29,350	5,895
707.40	29,847	11,790
707.60	30,346	17,809
707.80	30,847	23,954
708.00	31,348	30,098
708.20	31,853	36,494
708.40	32,358	42,890
708.60	32,864	49,412
708.80	33,373	56,061
709.00	33,882	62,711
709.20	34,395	69,615
709.40	34,908	76,520
709.60	35,424	83,554
709.80	35,942	90,716
710.00	36,460	97,879
710.20	41,591	106,453
710.40	46,722	115,028
710.60	50,379	124,517
710.80	52,562	134,920
711.00	54,746	145,324
711.20	59,292	157,409
711.40	63,838	169,495
711.60	66,471	182,239
711.80	67,192	195,641
712.00	67,912	209,044
712.20	68,641	222,808
712.40	69,370	236,573
712.60	70,101	250,520
712.80	70,832	264,650
713.00	71,563	278,780
713.20	72,541	293,337
713.40	73,518	307,894
713.60	74,372	322,664
713.80	75,102	337,648
714.00	75,832	352,632
714.20	76,567	367,982
714.40	77,302	383,332
714.60	78,039	398,867
714.80	78,780	414,586
715.00	79,521	430,305
715.20	80,267	446,395
715.40	81,012	462,486
715.60	81,761	478,764
715.80	82,512	495,228
716.00	83,263	511,693
716.20	84,019	528,535
716.40	84,776	545,377
716.60	85,535	562,408
716.80	86,296	579,629
717.00	87,058	596,851
717.20	89,829	614,955
717.40	92,600	633,059
717.60	95,403	651,864
717.80	98,239	671,370
718.00	**101,075**	**690,876**

Summary for Pond 4-2P: POND A FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	707.00'	12,923 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
707.00	1,050	0	0
707.50	1,139	547	547
708.00	1,231	593	1,140
708.50	1,327	640	1,779
709.00	1,426	688	2,468
709.50	1,529	739	3,206
710.00	1,635	791	3,997
710.50	2,015	913	4,910
711.00	2,435	1,113	6,022
711.50	3,391	1,457	7,479
712.00	3,548	1,735	9,214
712.50	3,709	1,814	11,028
713.00	3,873	1,896	12,923

Stage-Discharge for Pond 4-2P: POND A FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
707.00	**0.00**	709.60	0.00	712.20	0.00
707.05	0.00	709.65	0.00	712.25	0.00
707.10	0.00	709.70	0.00	712.30	0.00
707.15	0.00	709.75	0.00	712.35	0.00
707.20	0.00	709.80	0.00	712.40	0.00
707.25	0.00	709.85	0.00	712.45	0.00
707.30	0.00	709.90	0.00	712.50	0.00
707.35	0.00	709.95	0.00	712.55	0.00
707.40	0.00	710.00	0.00	712.60	0.00
707.45	0.00	710.05	0.00	712.65	0.00
707.50	0.00	710.10	0.00	712.70	0.00
707.55	0.00	710.15	0.00	712.75	0.00
707.60	0.00	710.20	0.00	712.80	0.00
707.65	0.00	710.25	0.00	712.85	0.00
707.70	0.00	710.30	0.00	712.90	0.00
707.75	0.00	710.35	0.00	712.95	0.00
707.80	0.00	710.40	0.00	713.00	0.00
707.85	0.00	710.45	0.00		
707.90	0.00	710.50	0.00		
707.95	0.00	710.55	0.00		
708.00	0.00	710.60	0.00		
708.05	0.00	710.65	0.00		
708.10	0.00	710.70	0.00		
708.15	0.00	710.75	0.00		
708.20	0.00	710.80	0.00		
708.25	0.00	710.85	0.00		
708.30	0.00	710.90	0.00		
708.35	0.00	710.95	0.00		
708.40	0.00	711.00	0.00		
708.45	0.00	711.05	0.00		
708.50	0.00	711.10	0.00		
708.55	0.00	711.15	0.00		
708.60	0.00	711.20	0.00		
708.65	0.00	711.25	0.00		
708.70	0.00	711.30	0.00		
708.75	0.00	711.35	0.00		
708.80	0.00	711.40	0.00		
708.85	0.00	711.45	0.00		
708.90	0.00	711.50	0.00		
708.95	0.00	711.55	0.00		
709.00	0.00	711.60	0.00		
709.05	0.00	711.65	0.00		
709.10	0.00	711.70	0.00		
709.15	0.00	711.75	0.00		
709.20	0.00	711.80	0.00		
709.25	0.00	711.85	0.00		
709.30	0.00	711.90	0.00		
709.35	0.00	711.95	0.00		
709.40	0.00	712.00	0.00		
709.45	0.00	712.05	0.00		
709.50	0.00	712.10	0.00		
709.55	0.00	712.15	0.00		

Stage-Area-Storage for Pond 4-2P: POND A FOREBAY

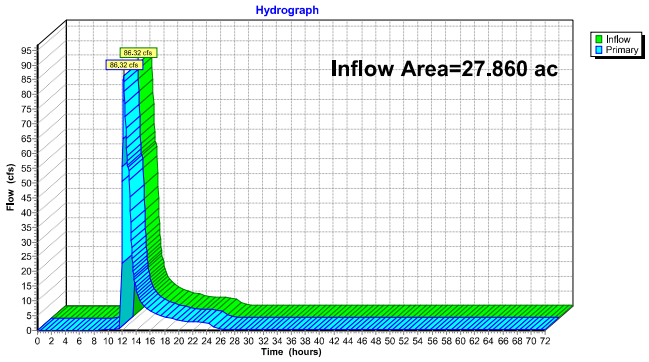
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
707.00	1,050	0	712.20	3,612	9,930
707.10	1,068	106	712.30	3,645	10,292
707.20	1,086	214	712.40	3,677	10,658
707.30	1,103	323	712.50	3,709	11,028
707.40	1,121	434	712.60	3,742	11,400
707.50	1,139	547	712.70	3,775	11,776
707.60	1,157	662	712.80	3,807	12,155
707.70	1,176	779	712.90	3,840	12,538
707.80	1,194	897	713.00	**3,873**	**12,923**
707.90	1,213	1,018			
708.00	1,231	1,140			
708.10	1,250	1,264			
708.20	1,269	1,390			
708.30	1,289	1,518			
708.40	1,308	1,648			
708.50	1,327	1,779			
708.60	1,347	1,913			
708.70	1,367	2,049			
708.80	1,386	2,186			
708.90	1,406	2,326			
709.00	1,426	2,468			
709.10	1,447	2,611			
709.20	1,467	2,757			
709.30	1,488	2,905			
709.40	1,508	3,054			
709.50	1,529	3,206			
709.60	1,550	3,360			
709.70	1,571	3,516			
709.80	1,593	3,674			
709.90	1,614	3,835			
710.00	1,635	3,997			
710.10	1,711	4,165			
710.20	1,787	4,339			
710.30	1,863	4,522			
710.40	1,939	4,712			
710.50	2,015	4,910			
710.60	2,099	5,115			
710.70	2,183	5,330			
710.80	2,267	5,552			
710.90	2,351	5,783			
711.00	2,435	6,022			
711.10	2,626	6,275			
711.20	2,817	6,547			
711.30	3,009	6,839			
711.40	3,200	7,149			
711.50	3,391	7,479			
711.60	3,422	7,819			
711.70	3,454	8,163			
711.80	3,485	8,510			
711.90	3,517	8,860			
712.00	3,548	9,214			
712.10	3,580	9,570			

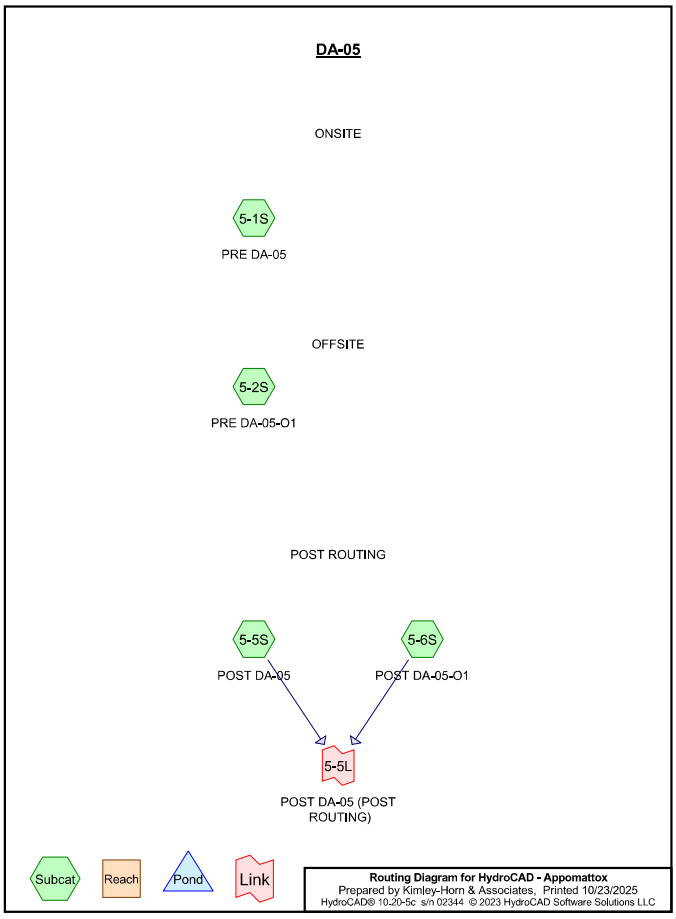
Summary for Link 4-4L: POST DA-04 (POST ROUTING)

Inflow Area = 27.860 ac, 0.00% Impervious, Inflow Depth > 5.79" for 100-yr event
Inflow = 86.32 cfs @ 12.25 hrs, Volume= 13.449 af
Primary = 86.32 cfs @ 12.25 hrs, Volume= 13.449 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4-4L: POST DA-04 (POST ROUTING)





Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 5-1S: PRE DA-05

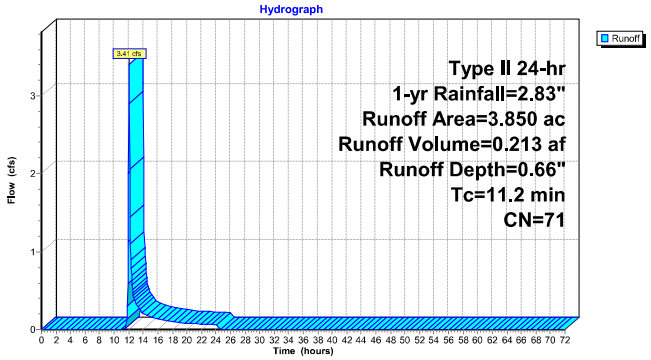
Runoff = 3.41 cfs @ 12.05 hrs, Volume= 0.213 af, Depth= 0.66"
Routed to nonexistent node 5-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	3.850	71	
	3.850		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2					Direct Entry,

Subcatchment 5-1S: PRE DA-05



Summary for Subcatchment 5-2S: PRE DA-05-O1

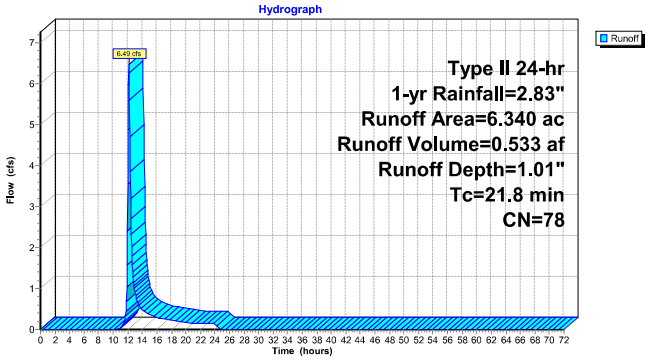
Runoff = 6.49 cfs @ 12.16 hrs, Volume= 0.533 af, Depth= 1.01"
Routed to nonexistent node 5-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	6.340	78	
	6.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8					Direct Entry,

Subcatchment 5-2S: PRE DA-05-O1



Summary for Subcatchment 5-5S: POST DA-05

[49] Hint: Tc<2dt may require smaller dt

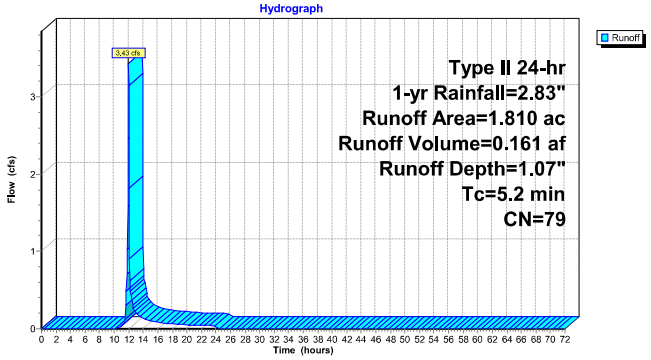
Runoff = 3.43 cfs @ 11.97 hrs, Volume= 0.161 af, Depth= 1.07"
Routed to Link 5-5L : POST DA-05 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	1.810	79	
	1.810		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2					Direct Entry,

Subcatchment 5-5S: POST DA-05



Summary for Subcatchment 5-6S: POST DA-05-O1

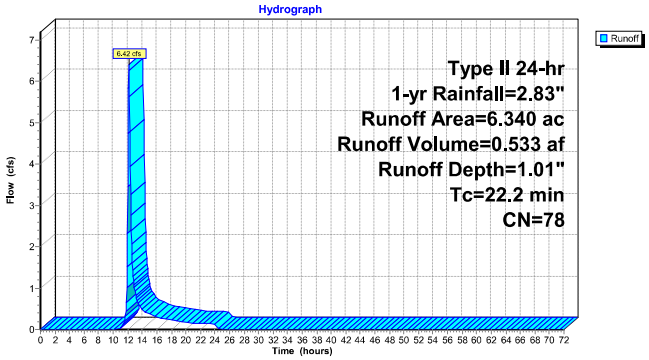
Runoff = 6.42 cfs @ 12.17 hrs, Volume= 0.533 af, Depth= 1.01"
Routed to Link 5-5L : POST DA-05 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	6.340	78	
	6.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2					Direct Entry,

Subcatchment 5-6S: POST DA-05-O1

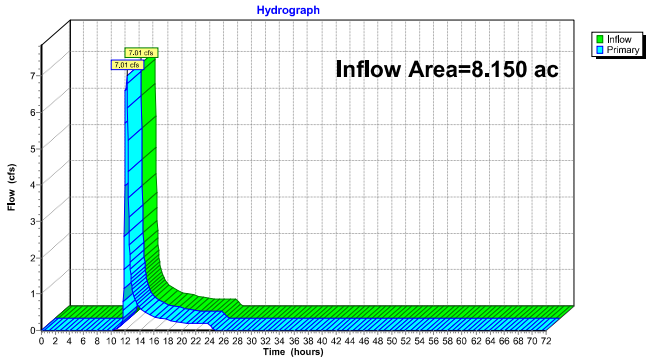


Summary for Link 5-5L: POST DA-05 (POST ROUTING)

Inflow Area = 8.150 ac, 0.00% Impervious, Inflow Depth = 1.02" for 1-yr event
Inflow = 7.01 cfs @ 12.15 hrs, Volume= 0.694 af
Primary = 7.01 cfs @ 12.15 hrs, Volume= 0.694 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5-5L: POST DA-05 (POST ROUTING)



Summary for Subcatchment 5-1S: PRE DA-05

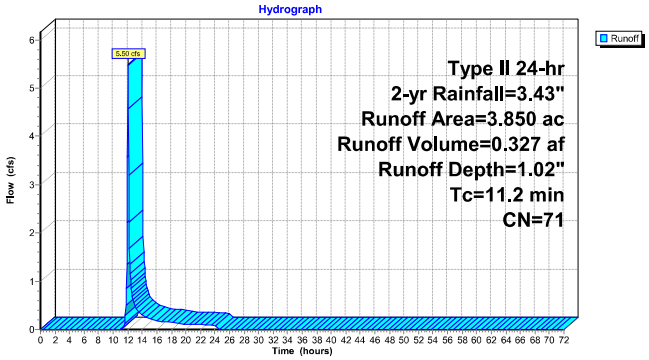
Runoff = 5.50 cfs @ 12.04 hrs, Volume= 0.327 af, Depth= 1.02"
Routed to nonexistent node 5-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	3.850	71	
	3.850		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2					Direct Entry,

Subcatchment 5-1S: PRE DA-05



Summary for Subcatchment 5-2S: PRE DA-05-O1

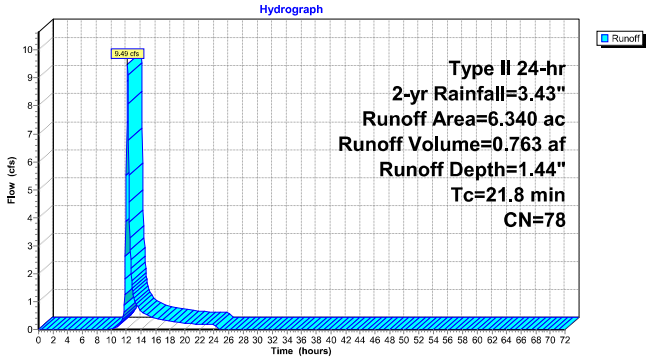
Runoff = 9.49 cfs @ 12.16 hrs, Volume= 0.763 af, Depth= 1.44"
Routed to nonexistent node 5-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	6.340	78	
	6.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8					Direct Entry,

Subcatchment 5-2S: PRE DA-05-O1



Summary for Subcatchment 5-5S: POST DA-05

[49] Hint: Tc<2dt may require smaller dt

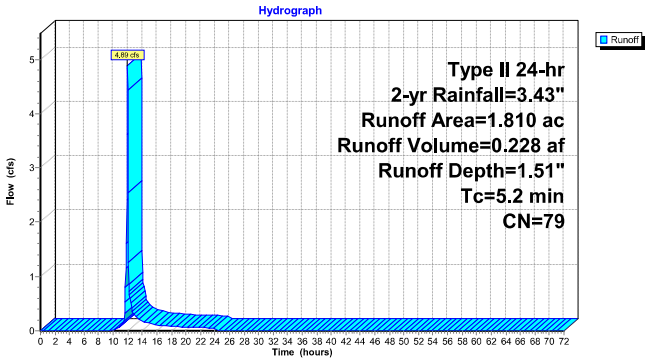
Runoff = 4.89 cfs @ 11.96 hrs, Volume= 0.228 af, Depth= 1.51"
Routed to Link 5-5L : POST DA-05 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	1.810	79	
	1.810		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2					Direct Entry,

Subcatchment 5-5S: POST DA-05



Summary for Subcatchment 5-6S: POST DA-05-O1

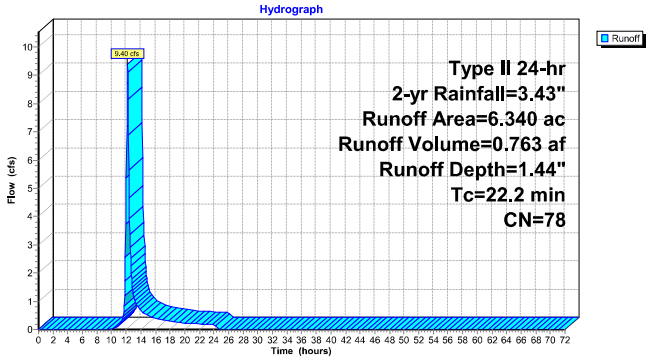
Runoff = 9.40 cfs @ 12.16 hrs, Volume= 0.763 af, Depth= 1.44"
Routed to Link 5-5L : POST DA-05 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	6.340	78	
	6.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2					Direct Entry,

Subcatchment 5-6S: POST DA-05-O1

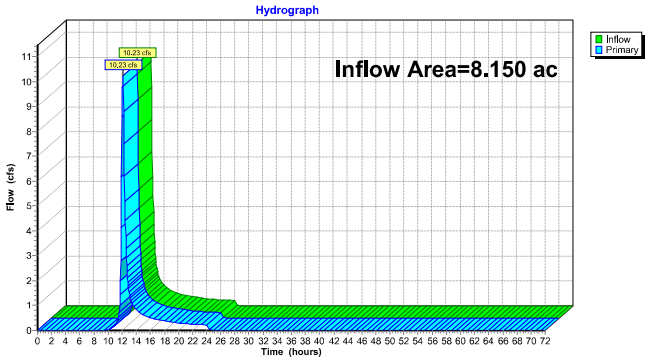


Summary for Link 5-5L: POST DA-05 (POST ROUTING)

Inflow Area = 8.150 ac, 0.00% Impervious, Inflow Depth = 1.46" for 2-yr event
Inflow = 10.23 cfs @ 12.15 hrs, Volume= 0.991 af
Primary = 10.23 cfs @ 12.15 hrs, Volume= 0.991 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5-5L: POST DA-05 (POST ROUTING)



Summary for Subcatchment 5-1S: PRE DA-05

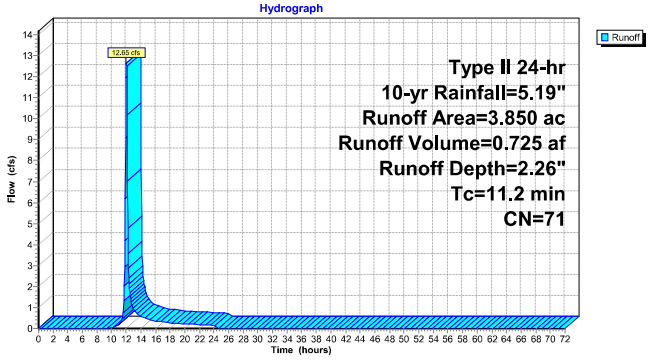
Runoff = 12.65 cfs @ 12.03 hrs, Volume= 0.725 af, Depth= 2.26"
Routed to nonexistent node 5-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	3.850	71	
	3.850		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2					Direct Entry,

Subcatchment 5-1S: PRE DA-05



Summary for Subcatchment 5-2S: PRE DA-05-O1

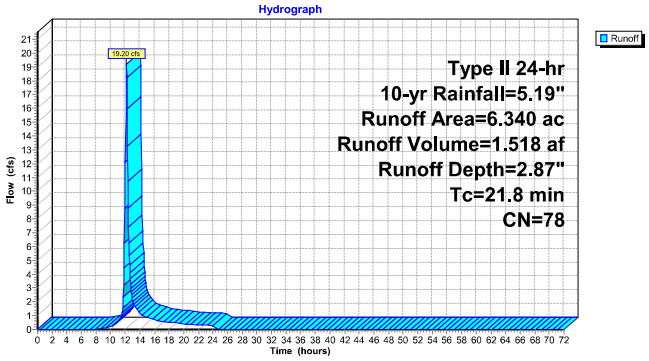
Runoff = 19.20 cfs @ 12.15 hrs, Volume= 1.518 af, Depth= 2.87"
Routed to nonexistent node 5-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	6.340	78	
	6.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8					Direct Entry,

Subcatchment 5-2S: PRE DA-05-O1



Summary for Subcatchment 5-5S: POST DA-05

[49] Hint: Tc<2dt may require smaller dt

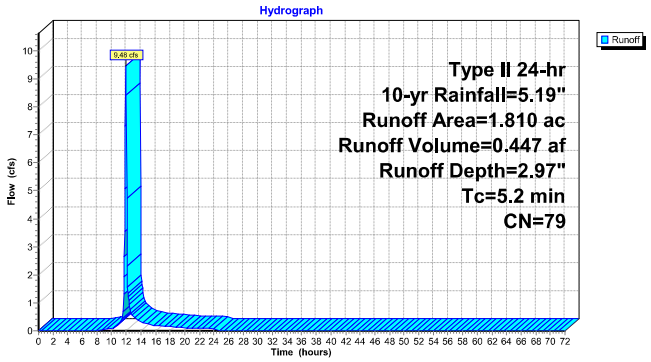
Runoff = 9.48 cfs @ 11.96 hrs, Volume= 0.447 af, Depth= 2.97"
Routed to Link 5-5L : POST DA-05 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	1.810	79	
	1.810		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2					Direct Entry,

Subcatchment 5-5S: POST DA-05



Summary for Subcatchment 5-6S: POST DA-05-O1

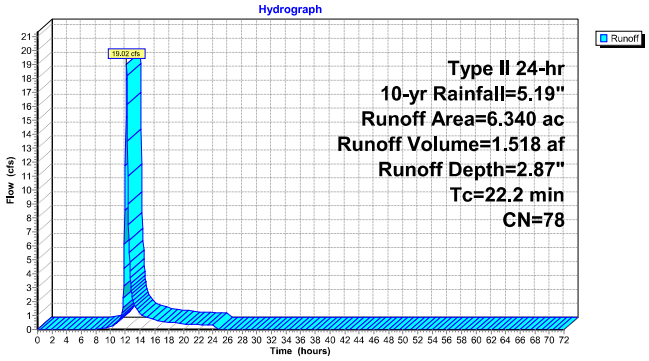
Runoff = 19.02 cfs @ 12.15 hrs, Volume= 1.518 af, Depth= 2.87"
Routed to Link 5-5L : POST DA-05 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	6.340	78	
	6.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2					Direct Entry,

Subcatchment 5-6S: POST DA-05-O1

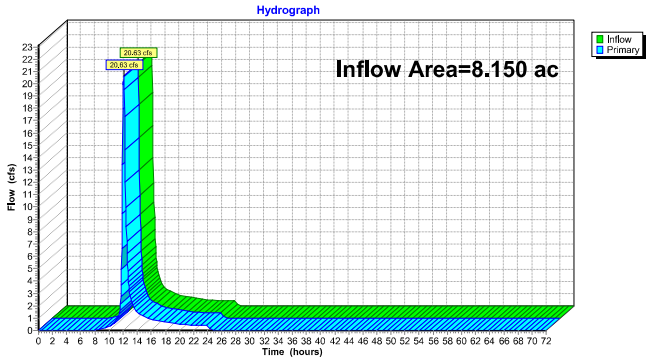


Summary for Link 5-5L: POST DA-05 (POST ROUTING)

Inflow Area = 8.150 ac, 0.00% Impervious, Inflow Depth = 2.89" for 10-yr event
Inflow = 20.63 cfs @ 12.14 hrs, Volume= 1.966 af
Primary = 20.63 cfs @ 12.14 hrs, Volume= 1.966 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5-5L: POST DA-05 (POST ROUTING)



Summary for Subcatchment 5-1S: PRE DA-05

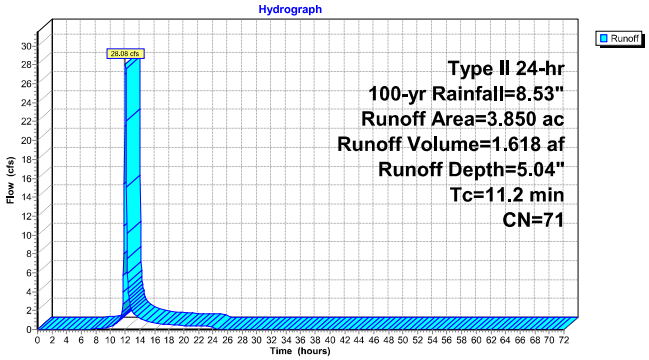
Runoff = 28.08 cfs @ 12.03 hrs, Volume= 1.618 af, Depth= 5.04"
Routed to nonexistent node 5-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	3.850	71	
	3.850		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2					Direct Entry,

Subcatchment 5-1S: PRE DA-05



Summary for Subcatchment 5-2S: PRE DA-05-O1

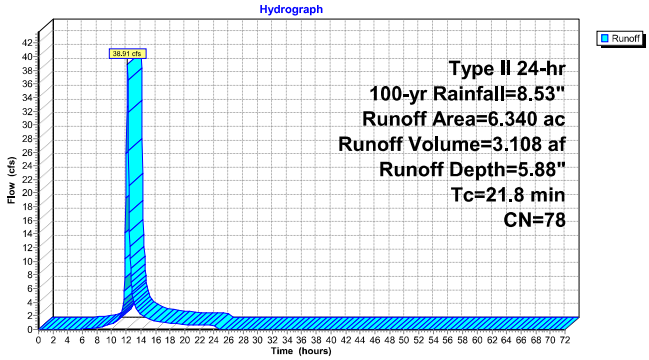
Runoff = 38.91 cfs @ 12.14 hrs, Volume= 3.108 af, Depth= 5.88"
Routed to nonexistent node 5-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	6.340	78	
	6.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8					Direct Entry,

Subcatchment 5-2S: PRE DA-05-O1



Summary for Subcatchment 5-5S: POST DA-05

[49] Hint: Tc<2dt may require smaller dt

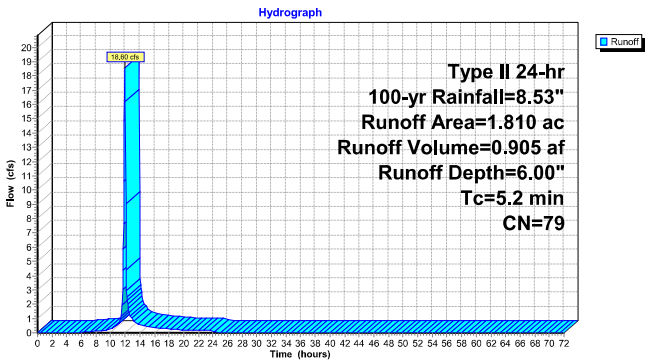
Runoff = 18.60 cfs @ 11.96 hrs, Volume= 0.905 af, Depth= 6.00"
Routed to Link 5-5L : POST DA-05 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	1.810	79	
	1.810		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2					Direct Entry,

Subcatchment 5-5S: POST DA-05



Summary for Subcatchment 5-6S: POST DA-05-O1

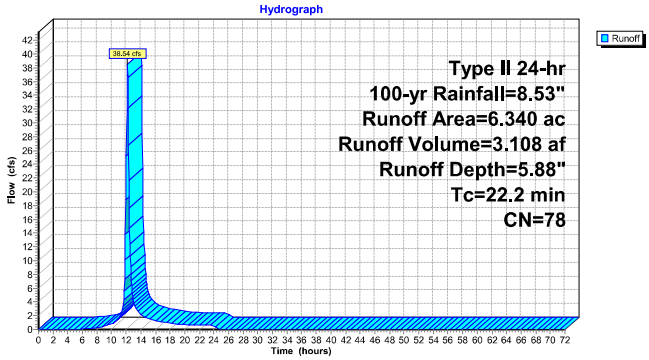
Runoff = 38.54 cfs @ 12.15 hrs, Volume= 3.108 af, Depth= 5.88"
Routed to Link 5-5L : POST DA-05 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	6.340	78	
	6.340		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2					Direct Entry,

Subcatchment 5-6S: POST DA-05-O1

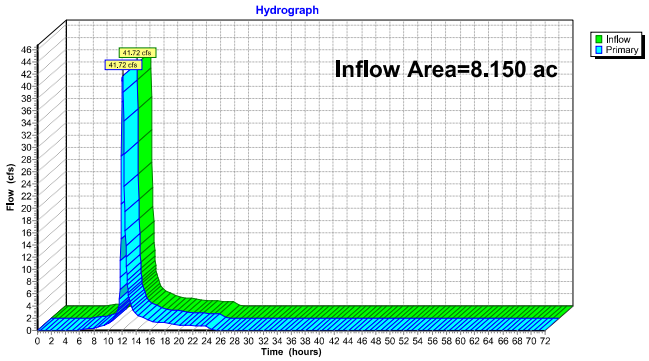


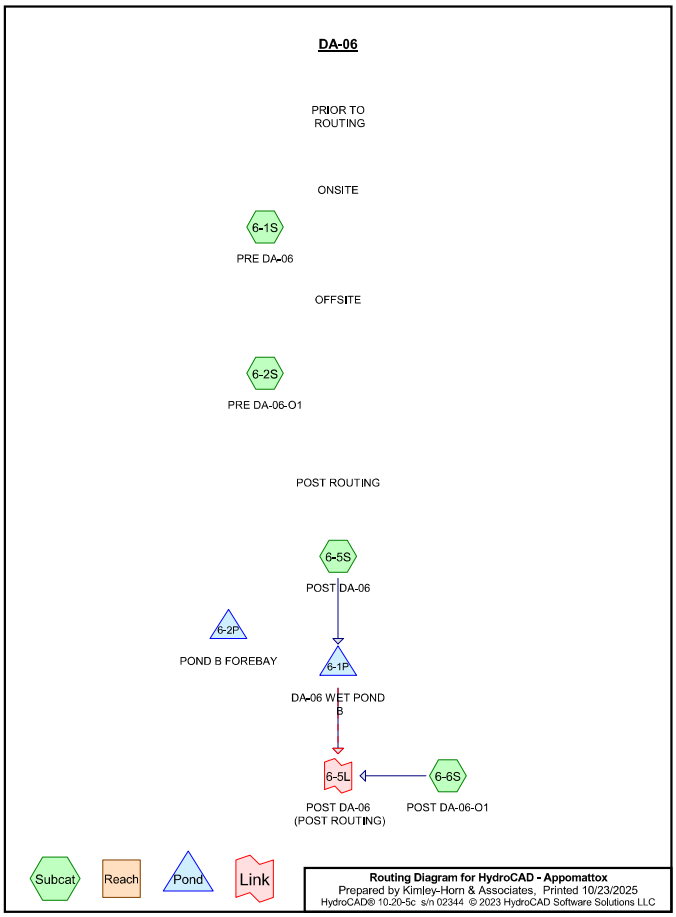
Summary for Link 5-5L: POST DA-05 (POST ROUTING)

Inflow Area = 8.150 ac, 0.00% Impervious, Inflow Depth = 5.91" for 100-yr event
Inflow = 41.72 cfs @ 12.13 hrs, Volume= 4.014 af
Primary = 41.72 cfs @ 12.13 hrs, Volume= 4.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 5-5L: POST DA-05 (POST ROUTING)





Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 6-1S: PRE DA-06

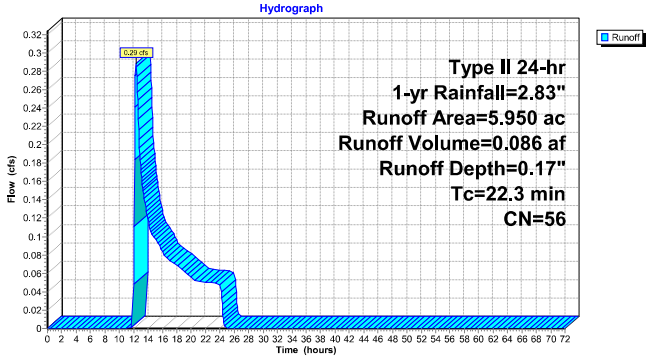
Runoff = 0.29 cfs @ 12.31 hrs, Volume= 0.086 af, Depth= 0.17"
Routed to nonexistent node 6-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	5.950	56	
	5.950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.3					Direct Entry,

Subcatchment 6-1S: PRE DA-06



Summary for Subcatchment 6-2S: PRE DA-06-O1

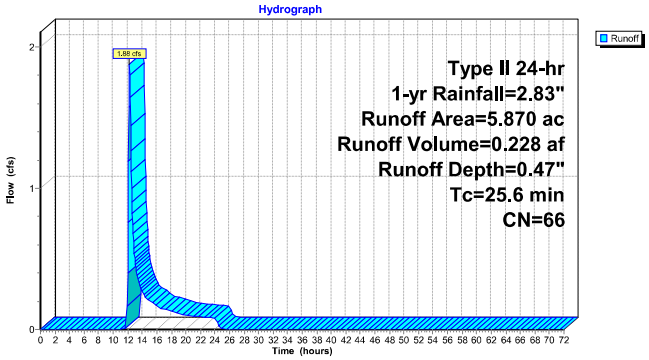
Runoff = 1.88 cfs @ 12.25 hrs, Volume= 0.228 af, Depth= 0.47"
Routed to nonexistent node 6-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	5.870	66	
	5.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.6					**Direct Entry,**

Subcatchment 6-2S: PRE DA-06-O1



Summary for Subcatchment 6-5S: POST DA-06

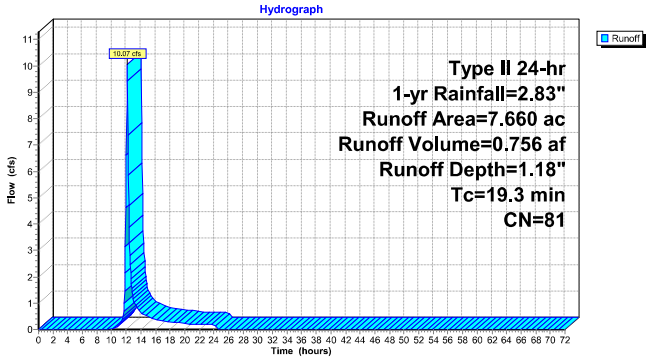
Runoff = 10.07 cfs @ 12.13 hrs, Volume= 0.756 af, Depth= 1.18"
Routed to Pond 6-1P : DA-06 WET POND B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	7.660	81	
	7.660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3					**Direct Entry,**

Subcatchment 6-5S: POST DA-06



Summary for Subcatchment 6-6S: POST DA-06-O1

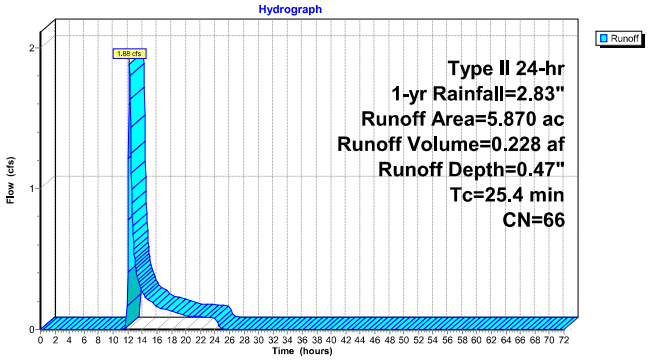
Runoff = 1.88 cfs @ 12.25 hrs, Volume= 0.228 af, Depth= 0.47"
Routed to Link 6-5L : POST DA-06 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	5.870	66	
	5.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.4					**Direct Entry,**

Subcatchment 6-6S: POST DA-06-O1



Summary for Pond 6-1P: DA-06 WET POND B

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth = 1.18" for 1-yr event
Inflow = 10.07 cfs @ 12.13 hrs, Volume= 0.756 af
Outflow = 0.05 cfs @ 24.37 hrs, Volume= 0.213 af, Atten= 100%, Lag= 734.6 min
Primary = 0.05 cfs @ 24.37 hrs, Volume= 0.213 af
Routed to Link 6-5L : POST DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 6-5L : POST DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 807.12' @ 24.37 hrs Surf.Area= 16,848 sf Storage= 44,824 cf (31,021 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,650.4 min (2,505.2 - 854.9)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

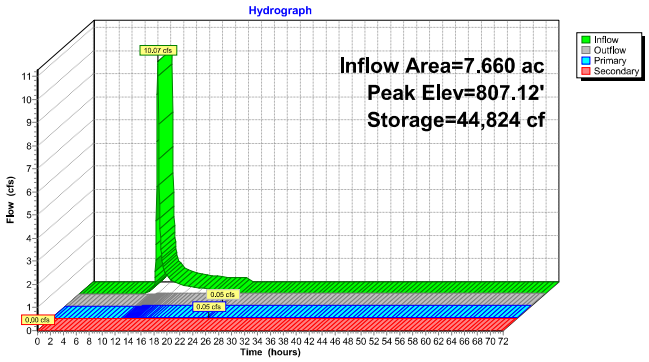
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.05 cfs @ 24.37 hrs HW=807.12' (Free Discharge)
└**1=CULVERT** (Passes 0.05 cfs of 54.91 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.05 cfs @ 6.93 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 6-1P: DA-06 WET POND B



Stage-Discharge for Pond 6-1P: DA-06 WET POND B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00	807.20	0.05	0.05	0.00
802.10	0.00	0.00	0.00	807.30	0.05	0.05	0.00
802.20	0.00	0.00	0.00	807.40	0.05	0.05	0.00
802.30	0.00	0.00	0.00	807.50	0.05	0.05	0.00
802.40	0.00	0.00	0.00	807.60	1.68	1.68	0.00
802.50	0.00	0.00	0.00	807.70	4.65	4.65	0.00
802.60	0.00	0.00	0.00	807.80	8.49	8.49	0.00
802.70	0.00	0.00	0.00	807.90	13.05	13.05	0.00
802.80	0.00	0.00	0.00	808.00	18.21	18.21	0.00
802.90	0.00	0.00	0.00	808.10	23.93	23.93	0.00
803.00	0.00	0.00	0.00	808.20	30.14	30.14	0.00
803.10	0.00	0.00	0.00	808.30	36.81	36.81	0.00
803.20	0.00	0.00	0.00	808.40	43.91	43.91	0.00
803.30	0.00	0.00	0.00	808.50	51.42	51.42	0.00
803.40	0.00	0.00	0.00	808.60	57.92	57.92	0.00
803.50	0.00	0.00	0.00	808.70	59.32	58.11	1.21
803.60	0.00	0.00	0.00	808.80	61.78	58.31	3.47
803.70	0.00	0.00	0.00	808.90	65.01	58.51	6.51
803.80	0.00	0.00	0.00	809.00	68.92	58.70	10.22
803.90	0.00	0.00	0.00	809.10	73.41	58.90	14.51
804.00	0.00	0.00	0.00	809.20	78.47	59.09	19.37
804.10	0.00	0.00	0.00	809.30	83.80	59.28	24.52
804.20	0.00	0.00	0.00	809.40	89.55	59.48	30.07
804.30	0.00	0.00	0.00	809.50	96.03	59.67	36.36
804.40	0.00	0.00	0.00	809.60	102.99	59.86	43.13
804.50	0.00	0.00	0.00	809.70	110.64	60.05	50.59
804.60	0.00	0.00	0.00	809.80	118.82	60.24	58.58
804.70	0.00	0.00	0.00	809.90	127.42	60.43	66.99
804.80	0.00	0.00	0.00	810.00	**136.54**	**60.62**	**75.92**
804.90	0.00	0.00	0.00				
805.00	0.00	0.00	0.00				
805.10	0.01	0.01	0.00				
805.20	0.01	0.01	0.00				
805.30	0.02	0.02	0.00				
805.40	0.02	0.02	0.00				
805.50	0.02	0.02	0.00				
805.60	0.02	0.02	0.00				
805.70	0.03	0.03	0.00				
805.80	0.03	0.03	0.00				
805.90	0.03	0.03	0.00				
806.00	0.03	0.03	0.00				
806.10	0.03	0.03	0.00				
806.20	0.03	0.03	0.00				
806.30	0.04	0.04	0.00				
806.40	0.04	0.04	0.00				
806.50	0.04	0.04	0.00				
806.60	0.04	0.04	0.00				
806.70	0.04	0.04	0.00				
806.80	0.04	0.04	0.00				
806.90	0.04	0.04	0.00				
807.00	0.04	0.04	0.00				
807.10	0.05	0.05	0.00				

Stage-Area-Storage for Pond 6-1P: DA-06 WET POND B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0	807.20	17,040	46,253
802.10	2,467	264	807.30	17,269	47,969
802.20	2,580	527	807.40	17,499	49,684
802.30	2,692	791	807.50	17,729	51,400
802.40	2,805	1,054	807.60	17,892	53,213
802.50	2,917	1,318	807.70	18,055	55,027
802.60	2,998	1,630	807.80	18,219	56,841
802.70	3,079	1,942	807.90	18,382	58,654
802.80	3,161	2,254	808.00	18,545	60,468
802.90	3,242	2,566	808.10	18,710	62,364
803.00	3,323	2,878	808.20	18,876	64,260
803.10	3,406	3,231	808.30	19,041	66,156
803.20	3,490	3,584	808.40	19,207	68,051
803.30	3,573	3,937	808.50	19,372	69,947
803.40	3,657	4,291	808.60	19,540	71,926
803.50	3,740	4,644	808.70	19,708	73,906
803.60	3,825	5,039	808.80	19,876	75,885
803.70	3,911	5,434	808.90	20,044	77,864
803.80	3,996	5,830	809.00	20,212	79,843
803.90	4,082	6,225	809.10	20,384	81,907
804.00	4,167	6,621	809.20	20,556	83,972
804.10	4,832	7,204	809.30	20,728	86,036
804.20	5,498	7,787	809.40	20,900	88,100
804.30	6,163	8,370	809.50	21,072	90,164
804.40	6,829	8,953	809.60	23,102	92,779
804.50	7,494	9,536	809.70	25,133	95,394
804.60	7,911	10,389	809.80	27,163	98,009
804.70	8,327	11,243	809.90	29,194	100,623
804.80	8,744	12,096	810.00	**31,224**	**103,238**
804.90	9,160	12,950			
805.00	9,577	13,804			
805.10	10,502	14,993			
805.20	11,427	16,182			
805.30	12,353	17,370			
805.40	13,278	18,559			
805.50	14,203	19,749			
805.60	14,359	21,208			
805.70	14,515	22,667			
805.80	14,670	24,126			
805.90	14,826	25,585			
806.00	14,982	27,045			
806.10	15,140	28,583			
806.20	15,299	30,120			
806.30	15,457	31,658			
806.40	15,616	33,196			
806.50	15,774	34,734			
806.60	15,935	36,351			
806.70	16,096	37,969			
806.80	16,258	39,587			
806.90	16,419	41,205			
807.00	16,580	42,822			
807.10	16,810	44,538			

Summary for Pond 6-2P: POND B FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	3,781 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	123	0	0
802.50	167	73	73
803.00	213	95	168
803.50	263	119	287
804.00	316	145	431
804.50	520	209	640
805.00	763	321	961
805.50	1,366	532	1,493
806.00	1,470	709	2,202
806.50	1,578	762	2,964
807.00	1,689	817	3,781

Stage-Discharge for Pond 6-2P: POND B FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
802.00	**0.00**	804.60	0.00
802.05	0.00	804.65	0.00
802.10	0.00	804.70	0.00
802.15	0.00	804.75	0.00
802.20	0.00	804.80	0.00
802.25	0.00	804.85	0.00
802.30	0.00	804.90	0.00
802.35	0.00	804.95	0.00
802.40	0.00	805.00	0.00
802.45	0.00	805.05	0.00
802.50	0.00	805.10	0.00
802.55	0.00	805.15	0.00
802.60	0.00	805.20	0.00
802.65	0.00	805.25	0.00
802.70	0.00	805.30	0.00
802.75	0.00	805.35	0.00
802.80	0.00	805.40	0.00
802.85	0.00	805.45	0.00
802.90	0.00	805.50	0.00
802.95	0.00	805.55	0.00
803.00	0.00	805.60	0.00
803.05	0.00	805.65	0.00
803.10	0.00	805.70	0.00
803.15	0.00	805.75	0.00
803.20	0.00	805.80	0.00
803.25	0.00	805.85	0.00
803.30	0.00	805.90	0.00
803.35	0.00	805.95	0.00
803.40	0.00	806.00	0.00
803.45	0.00	806.05	0.00
803.50	0.00	806.10	0.00
803.55	0.00	806.15	0.00
803.60	0.00	806.20	0.00
803.65	0.00	806.25	0.00
803.70	0.00	806.30	0.00
803.75	0.00	806.35	0.00
803.80	0.00	806.40	0.00
803.85	0.00	806.45	0.00
803.90	0.00	806.50	0.00
803.95	0.00	806.55	0.00
804.00	0.00	806.60	0.00
804.05	0.00	806.65	0.00
804.10	0.00	806.70	0.00
804.15	0.00	806.75	0.00
804.20	0.00	806.80	0.00
804.25	0.00	806.85	0.00
804.30	0.00	806.90	0.00
804.35	0.00	806.95	0.00
804.40	0.00	807.00	0.00
804.45	0.00		
804.50	0.00		
804.55	0.00		

Stage-Area-Storage for Pond 6-2P: POND B FOREBAY

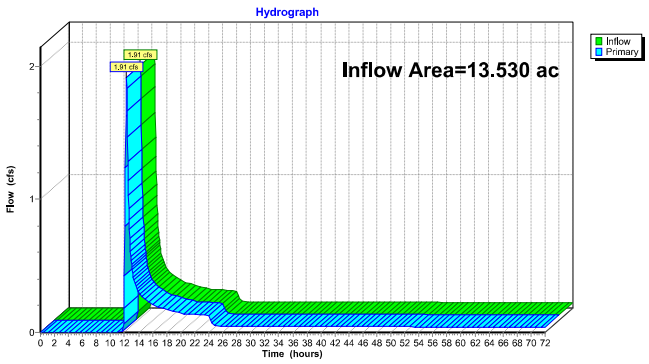
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	123	0	804.60	569	695
802.05	127	6	804.65	593	724
802.10	132	13	804.70	617	754
802.15	136	19	804.75	642	785
802.20	141	26	804.80	666	818
802.25	145	34	804.85	690	852
802.30	149	41	804.90	714	887
802.35	154	48	804.95	739	923
802.40	158	56	805.00	763	961
802.45	163	64	805.05	823	1,001
802.50	167	73	805.10	884	1,043
802.55	172	81	805.15	944	1,089
802.60	176	90	805.20	1,004	1,138
802.65	181	99	805.25	1,065	1,189
802.70	185	108	805.30	1,125	1,244
802.75	190	117	805.35	1,185	1,302
802.80	195	127	805.40	1,245	1,363
802.85	199	137	805.45	1,306	1,426
802.90	204	147	805.50	1,366	1,493
802.95	208	157	805.55	1,376	1,562
803.00	213	168	805.60	1,387	1,631
803.05	218	178	805.65	1,397	1,700
803.10	223	189	805.70	1,408	1,771
803.15	228	201	805.75	1,418	1,841
803.20	233	212	805.80	1,428	1,912
803.25	238	224	805.85	1,439	1,984
803.30	243	236	805.90	1,449	2,056
803.35	248	248	805.95	1,460	2,129
803.40	253	261	806.00	1,470	2,202
803.45	258	273	806.05	1,481	2,276
803.50	263	287	806.10	1,492	2,350
803.55	268	300	806.15	1,502	2,425
803.60	274	313	806.20	1,513	2,501
803.65	279	327	806.25	1,524	2,577
803.70	284	341	806.30	1,535	2,653
803.75	290	356	806.35	1,546	2,730
803.80	295	370	806.40	1,556	2,808
803.85	300	385	806.45	1,567	2,886
803.90	305	400	806.50	1,578	2,964
803.95	311	416	806.55	1,589	3,043
804.00	316	431	806.60	1,600	3,123
804.05	336	448	806.65	1,611	3,203
804.10	357	465	806.70	1,622	3,284
804.15	377	483	806.75	1,634	3,366
804.20	398	503	806.80	1,645	3,448
804.25	418	523	806.85	1,656	3,530
804.30	438	544	806.90	1,667	3,613
804.35	459	567	806.95	1,678	3,697
804.40	479	590	807.00	**1,689**	**3,781**
804.45	500	615			
804.50	520	640			
804.55	544	667			

Summary for Link 6-5L: POST DA-06 (POST ROUTING)

Inflow Area = 13.530 ac, 0.00% Impervious, Inflow Depth > 0.39" for 1-yr event
Inflow = 1.91 cfs @ 12.25 hrs, Volume= 0.441 af
Primary = 1.91 cfs @ 12.25 hrs, Volume= 0.441 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6-5L: POST DA-06 (POST ROUTING)



Summary for Subcatchment 6-1S: PRE DA-06

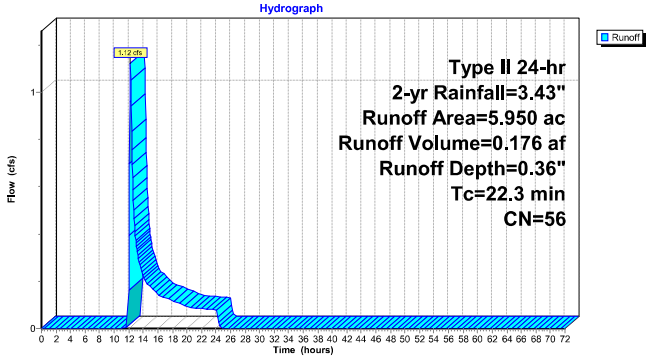
Runoff = 1.12 cfs @ 12.24 hrs, Volume= 0.176 af, Depth= 0.36"
Routed to nonexistent node 6-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	5.950	56	
	5.950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.3					**Direct Entry,**

Subcatchment 6-1S: PRE DA-06



Summary for Subcatchment 6-2S: PRE DA-06-O1

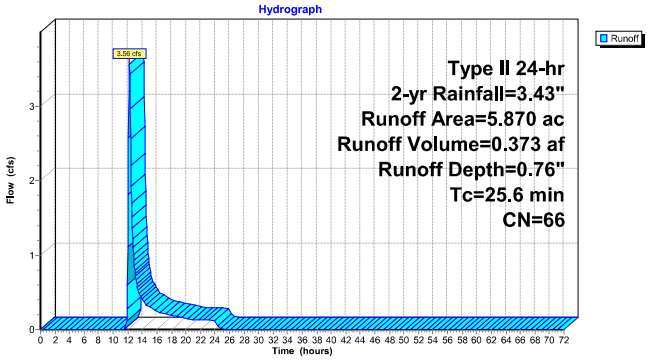
Runoff = 3.56 cfs @ 12.23 hrs, Volume= 0.373 af, Depth= 0.76"
Routed to nonexistent node 6-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	5.870	66	
	5.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.6					**Direct Entry,**

Subcatchment 6-2S: PRE DA-06-O1



Summary for Subcatchment 6-5S: POST DA-06

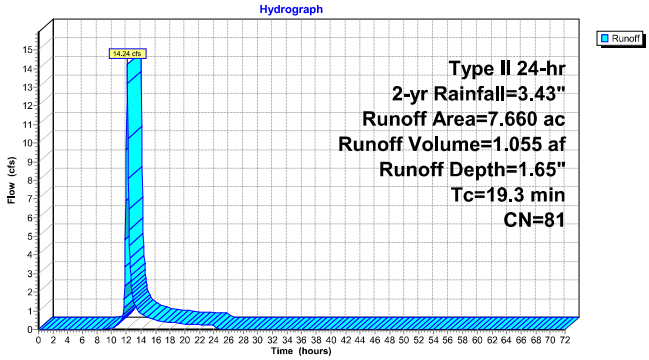
Runoff = 14.24 cfs @ 12.12 hrs, Volume= 1.055 af, Depth= 1.65"
Routed to Pond 6-1P : DA-06 WET POND B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	7.660	81	
	7.660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3					**Direct Entry,**

Subcatchment 6-5S: POST DA-06



Summary for Subcatchment 6-6S: POST DA-06-O1

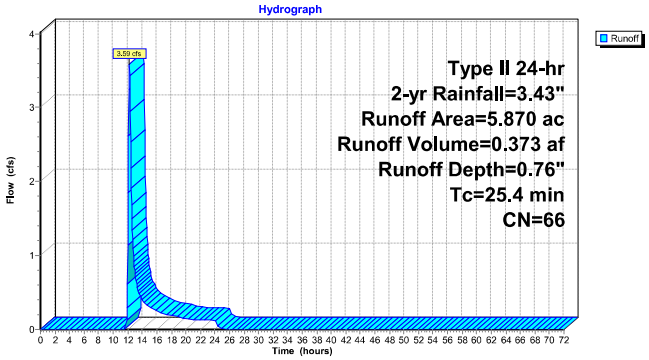
Runoff = 3.59 cfs @ 12.22 hrs, Volume= 0.373 af, Depth= 0.76"
Routed to Link 6-5L : POST DA-06 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	5.870	66	
	5.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.4					**Direct Entry,**

Subcatchment 6-6S: POST DA-06-O1



Summary for Pond 6-1P: DA-06 WET POND B

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth = 1.65" for 2-yr event
Inflow = 14.24 cfs @ 12.12 hrs, Volume= 1.055 af
Outflow = 0.37 cfs @ 18.41 hrs, Volume= 0.374 af, Atten= 97%, Lag= 377.4 min
Primary = 0.37 cfs @ 18.41 hrs, Volume= 0.374 af
Routed to Link 6-5L : POST DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 6-5L : POST DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 807.53' @ 18.41 hrs Surf.Area= 17,777 sf Storage= 51,932 cf (38,128 cf above start)

Plug-Flow detention time= 3,195.6 min calculated for 0.057 af (5% of inflow)
Center-of-Mass det. time= 1,188.5 min (2,033.7 - 845.2)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

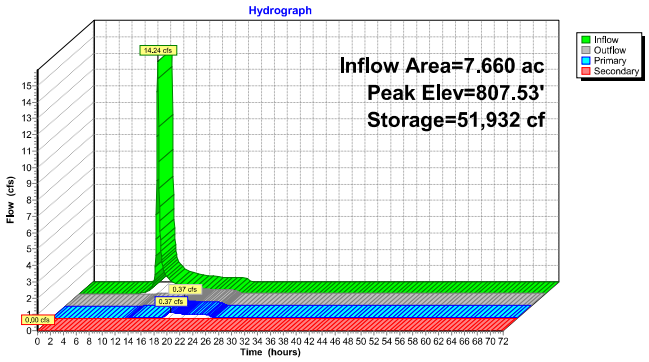
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.31 cfs @ 18.41 hrs HW=807.53' (Free Discharge)
└**1=CULVERT** (Passes 0.31 cfs of 55.76 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.05 cfs @ 7.59 fps)
└**3=TOP OF RISER** (Weir Controls 0.26 cfs @ 0.56 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 6-1P: DA-06 WET POND B



Stage-Discharge for Pond 6-1P: DA-06 WET POND B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00	807.20	0.05	0.05	0.00
802.10	0.00	0.00	0.00	807.30	0.05	0.05	0.00
802.20	0.00	0.00	0.00	807.40	0.05	0.05	0.00
802.30	0.00	0.00	0.00	807.50	0.05	0.05	0.00
802.40	0.00	0.00	0.00	807.60	1.68	1.68	0.00
802.50	0.00	0.00	0.00	807.70	4.65	4.65	0.00
802.60	0.00	0.00	0.00	807.80	8.49	8.49	0.00
802.70	0.00	0.00	0.00	807.90	13.05	13.05	0.00
802.80	0.00	0.00	0.00	808.00	18.21	18.21	0.00
802.90	0.00	0.00	0.00	808.10	23.93	23.93	0.00
803.00	0.00	0.00	0.00	808.20	30.14	30.14	0.00
803.10	0.00	0.00	0.00	808.30	36.81	36.81	0.00
803.20	0.00	0.00	0.00	808.40	43.91	43.91	0.00
803.30	0.00	0.00	0.00	808.50	51.42	51.42	0.00
803.40	0.00	0.00	0.00	808.60	57.92	57.92	0.00
803.50	0.00	0.00	0.00	808.70	59.32	58.11	1.21
803.60	0.00	0.00	0.00	808.80	61.78	58.31	3.47
803.70	0.00	0.00	0.00	808.90	65.01	58.51	6.51
803.80	0.00	0.00	0.00	809.00	68.92	58.70	10.22
803.90	0.00	0.00	0.00	809.10	73.41	58.90	14.51
804.00	0.00	0.00	0.00	809.20	78.47	59.09	19.37
804.10	0.00	0.00	0.00	809.30	83.80	59.28	24.52
804.20	0.00	0.00	0.00	809.40	89.55	59.48	30.07
804.30	0.00	0.00	0.00	809.50	96.03	59.67	36.36
804.40	0.00	0.00	0.00	809.60	102.99	59.86	43.13
804.50	0.00	0.00	0.00	809.70	110.64	60.05	50.59
804.60	0.00	0.00	0.00	809.80	118.82	60.24	58.58
804.70	0.00	0.00	0.00	809.90	127.42	60.43	66.99
804.80	0.00	0.00	0.00	810.00	**136.54**	**60.62**	**75.92**
804.90	0.00	0.00	0.00				
805.00	0.00	0.00	0.00				
805.10	0.01	0.01	0.00				
805.20	0.01	0.01	0.00				
805.30	0.02	0.02	0.00				
805.40	0.02	0.02	0.00				
805.50	0.02	0.02	0.00				
805.60	0.02	0.02	0.00				
805.70	0.03	0.03	0.00				
805.80	0.03	0.03	0.00				
805.90	0.03	0.03	0.00				
806.00	0.03	0.03	0.00				
806.10	0.03	0.03	0.00				
806.20	0.03	0.03	0.00				
806.30	0.04	0.04	0.00				
806.40	0.04	0.04	0.00				
806.50	0.04	0.04	0.00				
806.60	0.04	0.04	0.00				
806.70	0.04	0.04	0.00				
806.80	0.04	0.04	0.00				
806.90	0.04	0.04	0.00				
807.00	0.04	0.04	0.00				
807.10	0.05	0.05	0.00				

Stage-Area-Storage for Pond 6-1P: DA-06 WET POND B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0	807.20	17,040	46,253
802.10	2,467	264	807.30	17,269	47,969
802.20	2,580	527	807.40	17,499	49,684
802.30	2,692	791	807.50	17,729	51,400
802.40	2,805	1,054	807.60	17,892	53,213
802.50	2,917	1,318	807.70	18,055	55,027
802.60	2,998	1,630	807.80	18,219	56,841
802.70	3,079	1,942	807.90	18,382	58,654
802.80	3,161	2,254	808.00	18,545	60,468
802.90	3,242	2,566	808.10	18,710	62,364
803.00	3,323	2,878	808.20	18,876	64,260
803.10	3,406	3,231	808.30	19,041	66,156
803.20	3,490	3,584	808.40	19,207	68,051
803.30	3,573	3,937	808.50	19,372	69,947
803.40	3,657	4,291	808.60	19,540	71,926
803.50	3,740	4,644	808.70	19,708	73,906
803.60	3,825	5,039	808.80	19,876	75,885
803.70	3,911	5,434	808.90	20,044	77,864
803.80	3,996	5,830	809.00	20,212	79,843
803.90	4,082	6,225	809.10	20,384	81,907
804.00	4,167	6,621	809.20	20,556	83,972
804.10	4,832	7,204	809.30	20,728	86,036
804.20	5,498	7,787	809.40	20,900	88,100
804.30	6,163	8,370	809.50	21,072	90,164
804.40	6,829	8,953	809.60	23,102	92,779
804.50	7,494	9,536	809.70	25,133	95,394
804.60	7,911	10,389	809.80	27,163	98,009
804.70	8,327	11,243	809.90	29,194	100,623
804.80	8,744	12,096	810.00	**31,224**	**103,238**
804.90	9,160	12,950			
805.00	9,577	13,804			
805.10	10,502	14,993			
805.20	11,427	16,182			
805.30	12,353	17,370			
805.40	13,278	18,559			
805.50	14,203	19,749			
805.60	14,359	21,208			
805.70	14,515	22,667			
805.80	14,670	24,126			
805.90	14,826	25,585			
806.00	14,982	27,045			
806.10	15,140	28,583			
806.20	15,299	30,120			
806.30	15,457	31,658			
806.40	15,616	33,196			
806.50	15,774	34,734			
806.60	15,935	36,351			
806.70	16,096	37,969			
806.80	16,258	39,587			
806.90	16,419	41,205			
807.00	16,580	42,822			
807.10	16,810	44,538			

Summary for Pond 6-2P: POND B FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	3,781 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	123	0	0
802.50	167	73	73
803.00	213	95	168
803.50	263	119	287
804.00	316	145	431
804.50	520	209	640
805.00	763	321	961
805.50	1,366	532	1,493
806.00	1,470	709	2,202
806.50	1,578	762	2,964
807.00	1,689	817	3,781

Stage-Discharge for Pond 6-2P: POND B FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
802.00	**0.00**	804.60	0.00
802.05	0.00	804.65	0.00
802.10	0.00	804.70	0.00
802.15	0.00	804.75	0.00
802.20	0.00	804.80	0.00
802.25	0.00	804.85	0.00
802.30	0.00	804.90	0.00
802.35	0.00	804.95	0.00
802.40	0.00	805.00	0.00
802.45	0.00	805.05	0.00
802.50	0.00	805.10	0.00
802.55	0.00	805.15	0.00
802.60	0.00	805.20	0.00
802.65	0.00	805.25	0.00
802.70	0.00	805.30	0.00
802.75	0.00	805.35	0.00
802.80	0.00	805.40	0.00
802.85	0.00	805.45	0.00
802.90	0.00	805.50	0.00
802.95	0.00	805.55	0.00
803.00	0.00	805.60	0.00
803.05	0.00	805.65	0.00
803.10	0.00	805.70	0.00
803.15	0.00	805.75	0.00
803.20	0.00	805.80	0.00
803.25	0.00	805.85	0.00
803.30	0.00	805.90	0.00
803.35	0.00	805.95	0.00
803.40	0.00	806.00	0.00
803.45	0.00	806.05	0.00
803.50	0.00	806.10	0.00
803.55	0.00	806.15	0.00
803.60	0.00	806.20	0.00
803.65	0.00	806.25	0.00
803.70	0.00	806.30	0.00
803.75	0.00	806.35	0.00
803.80	0.00	806.40	0.00
803.85	0.00	806.45	0.00
803.90	0.00	806.50	0.00
803.95	0.00	806.55	0.00
804.00	0.00	806.60	0.00
804.05	0.00	806.65	0.00
804.10	0.00	806.70	0.00
804.15	0.00	806.75	0.00
804.20	0.00	806.80	0.00
804.25	0.00	806.85	0.00
804.30	0.00	806.90	0.00
804.35	0.00	806.95	0.00
804.40	0.00	807.00	0.00
804.45	0.00		
804.50	0.00		
804.55	0.00		

Stage-Area-Storage for Pond 6-2P: POND B FOREBAY

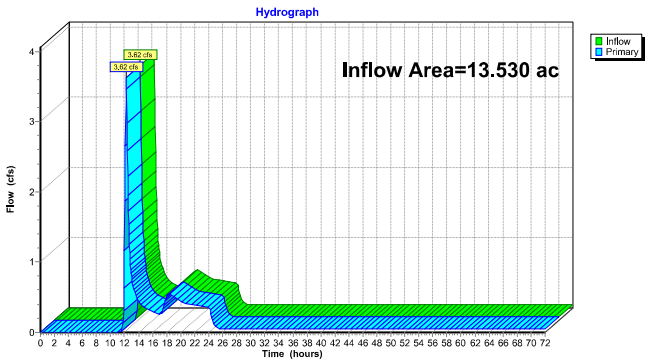
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	123	0	804.60	569	695
802.05	127	6	804.65	593	724
802.10	132	13	804.70	617	754
802.15	136	19	804.75	642	785
802.20	141	26	804.80	666	818
802.25	145	34	804.85	690	852
802.30	149	41	804.90	714	887
802.35	154	48	804.95	739	923
802.40	158	56	805.00	763	961
802.45	163	64	805.05	823	1,001
802.50	167	73	805.10	884	1,043
802.55	172	81	805.15	944	1,089
802.60	176	90	805.20	1,004	1,138
802.65	181	99	805.25	1,065	1,189
802.70	185	108	805.30	1,125	1,244
802.75	190	117	805.35	1,185	1,302
802.80	195	127	805.40	1,245	1,363
802.85	199	137	805.45	1,306	1,426
802.90	204	147	805.50	1,366	1,493
802.95	208	157	805.55	1,376	1,562
803.00	213	168	805.60	1,387	1,631
803.05	218	178	805.65	1,397	1,700
803.10	223	189	805.70	1,408	1,771
803.15	228	201	805.75	1,418	1,841
803.20	233	212	805.80	1,428	1,912
803.25	238	224	805.85	1,439	1,984
803.30	243	236	805.90	1,449	2,056
803.35	248	248	805.95	1,460	2,129
803.40	253	261	806.00	1,470	2,202
803.45	258	273	806.05	1,481	2,276
803.50	263	287	806.10	1,492	2,350
803.55	268	300	806.15	1,502	2,425
803.60	274	313	806.20	1,513	2,501
803.65	279	327	806.25	1,524	2,577
803.70	284	341	806.30	1,535	2,653
803.75	290	356	806.35	1,546	2,730
803.80	295	370	806.40	1,556	2,808
803.85	300	385	806.45	1,567	2,886
803.90	305	400	806.50	1,578	2,964
803.95	311	416	806.55	1,589	3,043
804.00	316	431	806.60	1,600	3,123
804.05	336	448	806.65	1,611	3,203
804.10	357	465	806.70	1,622	3,284
804.15	377	483	806.75	1,634	3,366
804.20	398	503	806.80	1,645	3,448
804.25	418	523	806.85	1,656	3,530
804.30	438	544	806.90	1,667	3,613
804.35	459	567	806.95	1,678	3,697
804.40	479	590	807.00	**1,689**	**3,781**
804.45	500	615			
804.50	520	640			
804.55	544	667			

Summary for Link 6-5L: POST DA-06 (POST ROUTING)

Inflow Area = 13.530 ac, 0.00% Impervious, Inflow Depth > 0.66" for 2-yr event
Inflow = 3.62 cfs @ 12.22 hrs, Volume= 0.747 af
Primary = 3.62 cfs @ 12.22 hrs, Volume= 0.747 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6-5L: POST DA-06 (POST ROUTING)



Summary for Subcatchment 6-1S: PRE DA-06

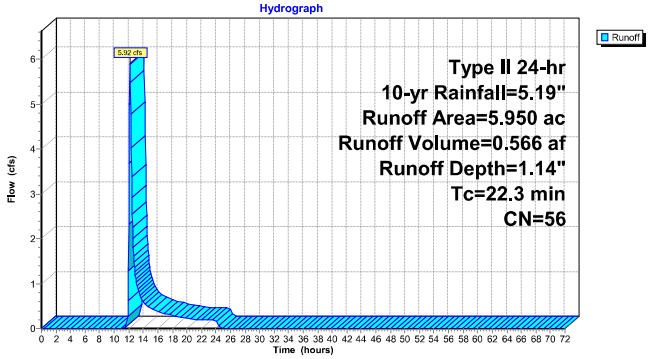
Runoff = 5.92 cfs @ 12.19 hrs, Volume= 0.566 af, Depth= 1.14"
Routed to nonexistent node 6-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	5.950	56	
	5.950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.3					**Direct Entry,**

Subcatchment 6-1S: PRE DA-06



Summary for Subcatchment 6-2S: PRE DA-06-O1

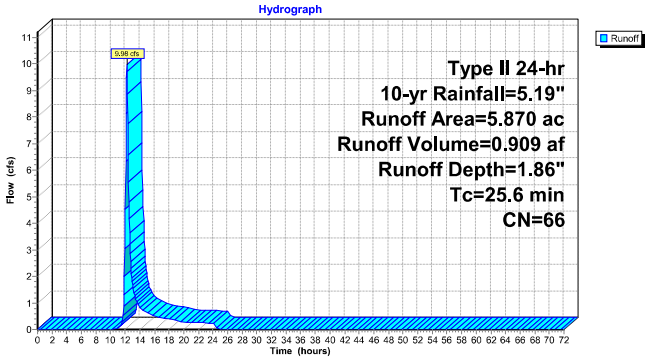
Runoff = 9.98 cfs @ 12.21 hrs, Volume= 0.909 af, Depth= 1.86"
Routed to nonexistent node 6-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	5.870	66	
	5.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.6					**Direct Entry,**

Subcatchment 6-2S: PRE DA-06-O1



Summary for Subcatchment 6-5S: POST DA-06

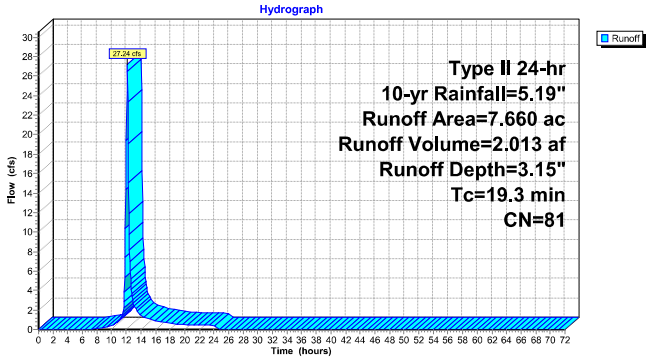
Runoff = 27.24 cfs @ 12.12 hrs, Volume= 2.013 af, Depth= 3.15"
Routed to Pond 6-1P : DA-06 WET POND B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	7.660	81	
	7.660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3					**Direct Entry,**

Subcatchment 6-5S: POST DA-06



Summary for Subcatchment 6-6S: POST DA-06-O1

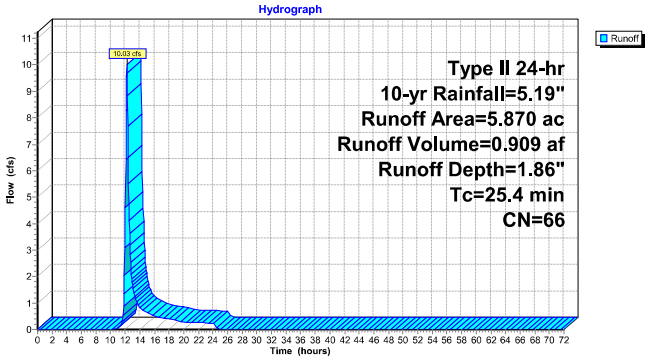
Runoff = 10.03 cfs @ 12.20 hrs, Volume= 0.909 af, Depth= 1.86"
Routed to Link 6-5L : POST DA-06 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	5.870	66	
	5.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.4					**Direct Entry,**

Subcatchment 6-6S: POST DA-06-O1



Summary for Pond 6-1P: DA-06 WET POND B

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth = 3.15" for 10-yr event
Inflow = 27.24 cfs @ 12.12 hrs, Volume= 2.013 af
Outflow = 8.70 cfs @ 12.44 hrs, Volume= 1.332 af, Atten= 68%, Lag= 19.3 min
Primary = 8.70 cfs @ 12.44 hrs, Volume= 1.332 af
Routed to Link 6-5L : POST DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 6-5L : POST DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 807.80' @ 12.44 hrs Surf.Area= 18,224 sf Storage= 56,906 cf (43,102 cf above start)

Plug-Flow detention time= 634.0 min calculated for 1.015 af (50% of inflow)
Center-of-Mass det. time= 376.3 min (1,203.1 - 826.8)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

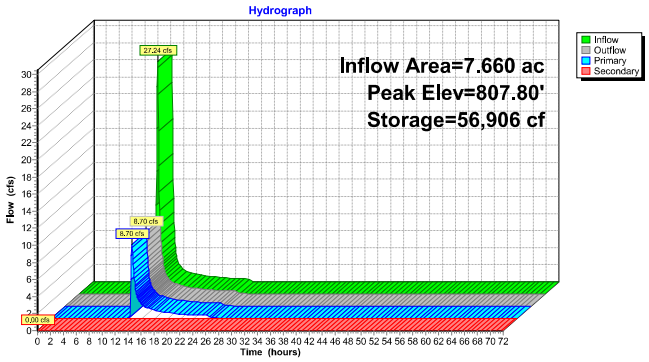
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.60 cfs @ 12.44 hrs HW=807.80' (Free Discharge)
└1=CULVERT (Passes 8.60 cfs of 56.32 cfs potential flow)
└2=1-YR CONTROL (Orifice Controls 0.05 cfs @ 7.99 fps)
└3=TOP OF RISER (Weir Controls 8.54 cfs @ 1.80 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└4=EMERGENCY SPILLWAY (Controls 0.00 cfs)

Pond 6-1P: DA-06 WET POND B



Stage-Discharge for Pond 6-1P: DA-06 WET POND B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00	807.20	0.05	0.05	0.00
802.10	0.00	0.00	0.00	807.30	0.05	0.05	0.00
802.20	0.00	0.00	0.00	807.40	0.05	0.05	0.00
802.30	0.00	0.00	0.00	807.50	0.05	0.05	0.00
802.40	0.00	0.00	0.00	807.60	1.68	1.68	0.00
802.50	0.00	0.00	0.00	807.70	4.65	4.65	0.00
802.60	0.00	0.00	0.00	807.80	8.49	8.49	0.00
802.70	0.00	0.00	0.00	807.90	13.05	13.05	0.00
802.80	0.00	0.00	0.00	808.00	18.21	18.21	0.00
802.90	0.00	0.00	0.00	808.10	23.93	23.93	0.00
803.00	0.00	0.00	0.00	808.20	30.14	30.14	0.00
803.10	0.00	0.00	0.00	808.30	36.81	36.81	0.00
803.20	0.00	0.00	0.00	808.40	43.91	43.91	0.00
803.30	0.00	0.00	0.00	808.50	51.42	51.42	0.00
803.40	0.00	0.00	0.00	808.60	57.92	57.92	0.00
803.50	0.00	0.00	0.00	808.70	59.32	58.11	1.21
803.60	0.00	0.00	0.00	808.80	61.78	58.31	3.47
803.70	0.00	0.00	0.00	808.90	65.01	58.51	6.51
803.80	0.00	0.00	0.00	809.00	68.92	58.70	10.22
803.90	0.00	0.00	0.00	809.10	73.41	58.90	14.51
804.00	0.00	0.00	0.00	809.20	78.47	59.09	19.37
804.10	0.00	0.00	0.00	809.30	83.80	59.28	24.52
804.20	0.00	0.00	0.00	809.40	89.55	59.48	30.07
804.30	0.00	0.00	0.00	809.50	96.03	59.67	36.36
804.40	0.00	0.00	0.00	809.60	102.99	59.86	43.13
804.50	0.00	0.00	0.00	809.70	110.64	60.05	50.59
804.60	0.00	0.00	0.00	809.80	118.82	60.24	58.58
804.70	0.00	0.00	0.00	809.90	127.42	60.43	66.99
804.80	0.00	0.00	0.00	810.00	**136.54**	**60.62**	**75.92**
804.90	0.00	0.00	0.00				
805.00	0.00	0.00	0.00				
805.10	0.01	0.01	0.00				
805.20	0.01	0.01	0.00				
805.30	0.02	0.02	0.00				
805.40	0.02	0.02	0.00				
805.50	0.02	0.02	0.00				
805.60	0.02	0.02	0.00				
805.70	0.03	0.03	0.00				
805.80	0.03	0.03	0.00				
805.90	0.03	0.03	0.00				
806.00	0.03	0.03	0.00				
806.10	0.03	0.03	0.00				
806.20	0.03	0.03	0.00				
806.30	0.04	0.04	0.00				
806.40	0.04	0.04	0.00				
806.50	0.04	0.04	0.00				
806.60	0.04	0.04	0.00				
806.70	0.04	0.04	0.00				
806.80	0.04	0.04	0.00				
806.90	0.04	0.04	0.00				
807.00	0.04	0.04	0.00				
807.10	0.05	0.05	0.00				

Stage-Area-Storage for Pond 6-1P: DA-06 WET POND B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0	807.20	17,040	46,253
802.10	2,467	264	807.30	17,269	47,969
802.20	2,580	527	807.40	17,499	49,684
802.30	2,692	791	807.50	17,729	51,400
802.40	2,805	1,054	807.60	17,892	53,213
802.50	2,917	1,318	807.70	18,055	55,027
802.60	2,998	1,630	807.80	18,219	56,841
802.70	3,079	1,942	807.90	18,382	58,654
802.80	3,161	2,254	808.00	18,545	60,468
802.90	3,242	2,566	808.10	18,710	62,364
803.00	3,323	2,878	808.20	18,876	64,260
803.10	3,406	3,231	808.30	19,041	66,156
803.20	3,490	3,584	808.40	19,207	68,051
803.30	3,573	3,937	808.50	19,372	69,947
803.40	3,657	4,291	808.60	19,540	71,926
803.50	3,740	4,644	808.70	19,708	73,906
803.60	3,825	5,039	808.80	19,876	75,885
803.70	3,911	5,434	808.90	20,044	77,864
803.80	3,996	5,830	809.00	20,212	79,843
803.90	4,082	6,225	809.10	20,384	81,907
804.00	4,167	6,621	809.20	20,556	83,972
804.10	4,832	7,204	809.30	20,728	86,036
804.20	5,498	7,787	809.40	20,900	88,100
804.30	6,163	8,370	809.50	21,072	90,164
804.40	6,829	8,953	809.60	23,102	92,779
804.50	7,494	9,536	809.70	25,133	95,394
804.60	7,911	10,389	809.80	27,163	98,009
804.70	8,327	11,243	809.90	29,194	100,623
804.80	8,744	12,096	810.00	**31,224**	**103,238**
804.90	9,160	12,950			
805.00	9,577	13,804			
805.10	10,502	14,993			
805.20	11,427	16,182			
805.30	12,353	17,370			
805.40	13,278	18,559			
805.50	14,203	19,749			
805.60	14,359	21,208			
805.70	14,515	22,667			
805.80	14,670	24,126			
805.90	14,826	25,585			
806.00	14,982	27,045			
806.10	15,140	28,583			
806.20	15,299	30,120			
806.30	15,457	31,658			
806.40	15,616	33,196			
806.50	15,774	34,734			
806.60	15,935	36,351			
806.70	16,096	37,969			
806.80	16,258	39,587			
806.90	16,419	41,205			
807.00	16,580	42,822			
807.10	16,810	44,538			

Summary for Pond 6-2P: POND B FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	3,781 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	123	0	0
802.50	167	73	73
803.00	213	95	168
803.50	263	119	287
804.00	316	145	431
804.50	520	209	640
805.00	763	321	961
805.50	1,366	532	1,493
806.00	1,470	709	2,202
806.50	1,578	762	2,964
807.00	1,689	817	3,781

Stage-Discharge for Pond 6-2P: POND B FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
802.00	**0.00**	804.60	0.00
802.05	0.00	804.65	0.00
802.10	0.00	804.70	0.00
802.15	0.00	804.75	0.00
802.20	0.00	804.80	0.00
802.25	0.00	804.85	0.00
802.30	0.00	804.90	0.00
802.35	0.00	804.95	0.00
802.40	0.00	805.00	0.00
802.45	0.00	805.05	0.00
802.50	0.00	805.10	0.00
802.55	0.00	805.15	0.00
802.60	0.00	805.20	0.00
802.65	0.00	805.25	0.00
802.70	0.00	805.30	0.00
802.75	0.00	805.35	0.00
802.80	0.00	805.40	0.00
802.85	0.00	805.45	0.00
802.90	0.00	805.50	0.00
802.95	0.00	805.55	0.00
803.00	0.00	805.60	0.00
803.05	0.00	805.65	0.00
803.10	0.00	805.70	0.00
803.15	0.00	805.75	0.00
803.20	0.00	805.80	0.00
803.25	0.00	805.85	0.00
803.30	0.00	805.90	0.00
803.35	0.00	805.95	0.00
803.40	0.00	806.00	0.00
803.45	0.00	806.05	0.00
803.50	0.00	806.10	0.00
803.55	0.00	806.15	0.00
803.60	0.00	806.20	0.00
803.65	0.00	806.25	0.00
803.70	0.00	806.30	0.00
803.75	0.00	806.35	0.00
803.80	0.00	806.40	0.00
803.85	0.00	806.45	0.00
803.90	0.00	806.50	0.00
803.95	0.00	806.55	0.00
804.00	0.00	806.60	0.00
804.05	0.00	806.65	0.00
804.10	0.00	806.70	0.00
804.15	0.00	806.75	0.00
804.20	0.00	806.80	0.00
804.25	0.00	806.85	0.00
804.30	0.00	806.90	0.00
804.35	0.00	806.95	0.00
804.40	0.00	807.00	0.00
804.45	0.00		
804.50	0.00		
804.55	0.00		

Stage-Area-Storage for Pond 6-2P: POND B FOREBAY

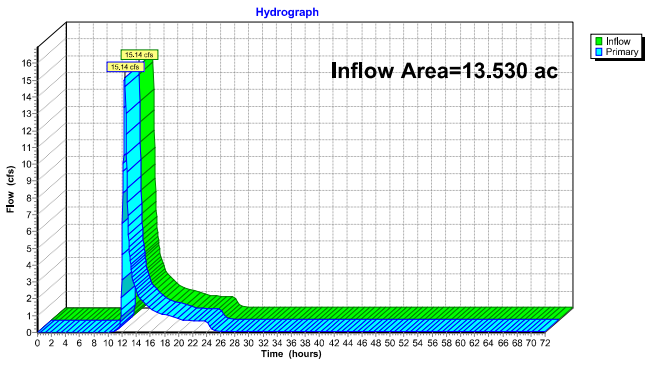
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	123	0	804.60	569	695
802.05	127	6	804.65	593	724
802.10	132	13	804.70	617	754
802.15	136	19	804.75	642	785
802.20	141	26	804.80	666	818
802.25	145	34	804.85	690	852
802.30	149	41	804.90	714	887
802.35	154	48	804.95	739	923
802.40	158	56	805.00	763	961
802.45	163	64	805.05	823	1,001
802.50	167	73	805.10	884	1,043
802.55	172	81	805.15	944	1,089
802.60	176	90	805.20	1,004	1,138
802.65	181	99	805.25	1,065	1,189
802.70	185	108	805.30	1,125	1,244
802.75	190	117	805.35	1,185	1,302
802.80	195	127	805.40	1,245	1,363
802.85	199	137	805.45	1,306	1,426
802.90	204	147	805.50	1,366	1,493
802.95	208	157	805.55	1,376	1,562
803.00	213	168	805.60	1,387	1,631
803.05	218	178	805.65	1,397	1,700
803.10	223	189	805.70	1,408	1,771
803.15	228	201	805.75	1,418	1,841
803.20	233	212	805.80	1,428	1,912
803.25	238	224	805.85	1,439	1,984
803.30	243	236	805.90	1,449	2,056
803.35	248	248	805.95	1,460	2,129
803.40	253	261	806.00	1,470	2,202
803.45	258	273	806.05	1,481	2,276
803.50	263	287	806.10	1,492	2,350
803.55	268	300	806.15	1,502	2,425
803.60	274	313	806.20	1,513	2,501
803.65	279	327	806.25	1,524	2,577
803.70	284	341	806.30	1,535	2,653
803.75	290	356	806.35	1,546	2,730
803.80	295	370	806.40	1,556	2,808
803.85	300	385	806.45	1,567	2,886
803.90	305	400	806.50	1,578	2,964
803.95	311	416	806.55	1,589	3,043
804.00	316	431	806.60	1,600	3,123
804.05	336	448	806.65	1,611	3,203
804.10	357	465	806.70	1,622	3,284
804.15	377	483	806.75	1,634	3,366
804.20	398	503	806.80	1,645	3,448
804.25	418	523	806.85	1,656	3,530
804.30	438	544	806.90	1,667	3,613
804.35	459	567	806.95	1,678	3,697
804.40	479	590	807.00	**1,689**	**3,781**
804.45	500	615			
804.50	520	640			
804.55	544	667			

Summary for Link 6-5L: POST DA-06 (POST ROUTING)

Inflow Area = 13.530 ac, 0.00% Impervious, Inflow Depth > 1.99" for 10-yr event
Inflow = 15.14 cfs @ 12.38 hrs, Volume= 2.241 af
Primary = 15.14 cfs @ 12.38 hrs, Volume= 2.241 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6-5L: POST DA-06 (POST ROUTING)



Summary for Subcatchment 6-1S: PRE DA-06

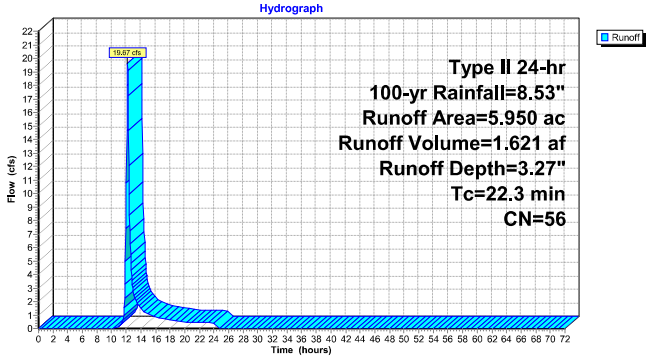
Runoff = 19.67 cfs @ 12.16 hrs, Volume= 1.621 af, Depth= 3.27"
Routed to nonexistent node 6-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	5.950	56	
	5.950		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.3					**Direct Entry,**

Subcatchment 6-1S: PRE DA-06



Summary for Subcatchment 6-2S: PRE DA-06-O1

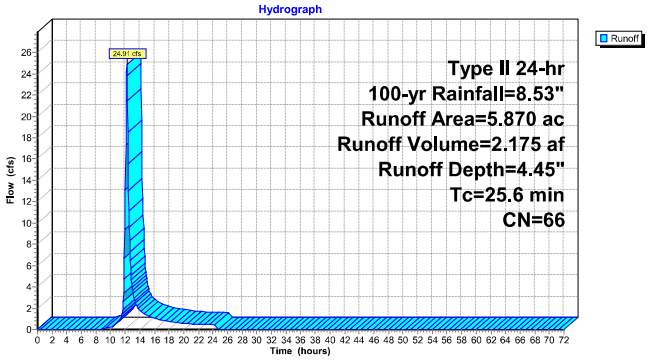
Runoff = 24.91 cfs @ 12.20 hrs, Volume= 2.175 af, Depth= 4.45"
Routed to nonexistent node 6-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	5.870	66	
	5.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.6					**Direct Entry,**

Subcatchment 6-2S: PRE DA-06-O1



Summary for Subcatchment 6-5S: POST DA-06

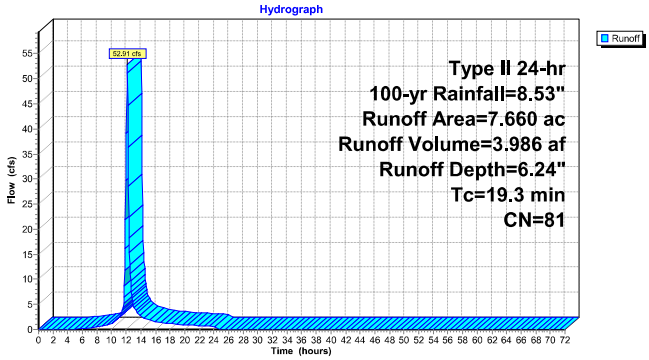
Runoff = 52.91 cfs @ 12.11 hrs, Volume= 3.986 af, Depth= 6.24"
Routed to Pond 6-1P : DA-06 WET POND B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	7.660	81	
	7.660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.3					**Direct Entry,**

Subcatchment 6-5S: POST DA-06



Summary for Subcatchment 6-6S: POST DA-06-O1

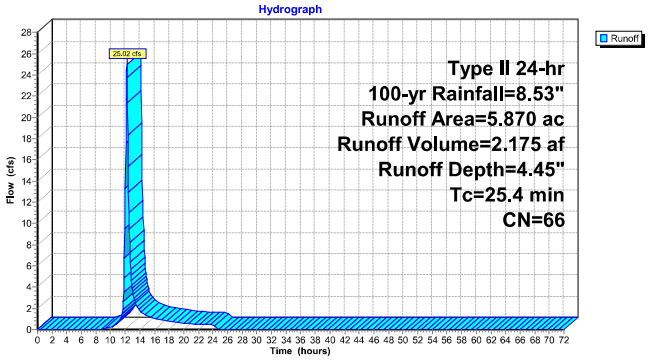
Runoff = 25.02 cfs @ 12.19 hrs, Volume= 2.175 af, Depth= 4.45"
Routed to Link 6-5L : POST DA-06 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	5.870	66	
	5.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.4					**Direct Entry,**

Subcatchment 6-6S: POST DA-06-O1



Summary for Pond 6-1P: DA-06 WET POND B

Inflow Area = 7.660 ac, 0.00% Impervious, Inflow Depth = 6.24" for 100-yr event
Inflow = 52.91 cfs @ 12.11 hrs, Volume= 3.986 af
Outflow = 45.55 cfs @ 12.20 hrs, Volume= 3.304 af, Atten= 14%, Lag= 5.2 min
Primary = 45.55 cfs @ 12.20 hrs, Volume= 3.304 af
Routed to Link 6-5L : POST DA-06 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 6-5L : POST DA-06 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 805.00' Surf.Area= 9,577 sf Storage= 13,804 cf
Peak Elev= 808.42' @ 12.20 hrs Surf.Area= 19,243 sf Storage= 68,468 cf (54,664 cf above start)

Plug-Flow detention time= 282.3 min calculated for 2.985 af (75% of inflow)
Center-of-Mass det. time= 167.4 min (974.7 - 807.4)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	103,238 cf	**Custom Stage Data (Prismatic)** Listed below

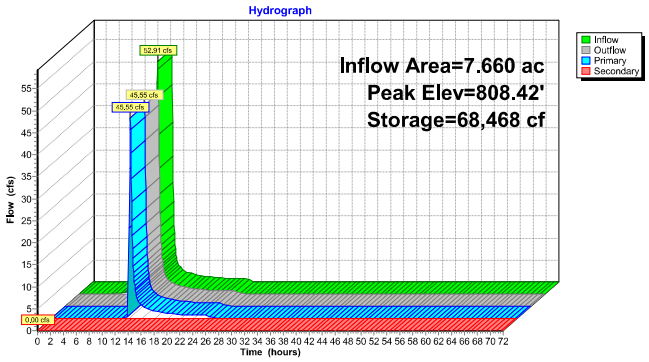
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	2,355	0	0
802.50	2,917	1,318	1,318
803.00	3,323	1,560	2,878
803.50	3,740	1,766	4,644
804.00	4,167	1,977	6,621
804.50	7,494	2,915	9,536
805.00	9,577	4,268	13,804
805.50	14,203	5,945	19,749
806.00	14,982	7,296	27,045
806.50	15,774	7,689	34,734
807.00	16,580	8,089	42,822
807.50	17,729	8,577	51,400
808.00	18,545	9,069	60,468
808.50	19,372	9,479	69,947
809.00	20,212	9,896	79,843
809.50	21,072	10,321	90,164
810.00	31,224	13,074	103,238

Device	Routing	Invert	Outlet Devices
#1	Primary	792.94'	**24.0" Round CULVERT** L= 108.9' Ke= 0.500 Inlet / Outlet Invert= 792.94' / 782.10' S= 0.0995 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	805.00'	**1.1" Vert. 1-YR CONTROL** C= 0.600 Limited to weir flow at low heads
#3	Device 1	807.50'	**60.0" Horiz. TOP OF RISER** C= 0.600 Limited to weir flow at low heads
#4	Secondary	808.60'	**14.0' long + 3.0 '/' SideZ x 23.6' breadth EMERGENCY SPILLWAY** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=45.52 cfs @ 12.20 hrs HW=808.42' (Free Discharge)
└**1=CULVERT** (Passes 45.52 cfs of 57.56 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.06 cfs @ 8.85 fps)
└**3=TOP OF RISER** (Weir Controls 45.46 cfs @ 3.14 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 6-1P: DA-06 WET POND B



Stage-Discharge for Pond 6-1P: DA-06 WET POND B

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
802.00	0.00	0.00	0.00	807.20	0.05	0.05	0.00
802.10	0.00	0.00	0.00	807.30	0.05	0.05	0.00
802.20	0.00	0.00	0.00	807.40	0.05	0.05	0.00
802.30	0.00	0.00	0.00	807.50	0.05	0.05	0.00
802.40	0.00	0.00	0.00	807.60	1.68	1.68	0.00
802.50	0.00	0.00	0.00	807.70	4.65	4.65	0.00
802.60	0.00	0.00	0.00	807.80	8.49	8.49	0.00
802.70	0.00	0.00	0.00	807.90	13.05	13.05	0.00
802.80	0.00	0.00	0.00	808.00	18.21	18.21	0.00
802.90	0.00	0.00	0.00	808.10	23.93	23.93	0.00
803.00	0.00	0.00	0.00	808.20	30.14	30.14	0.00
803.10	0.00	0.00	0.00	808.30	36.81	36.81	0.00
803.20	0.00	0.00	0.00	808.40	43.91	43.91	0.00
803.30	0.00	0.00	0.00	808.50	51.42	51.42	0.00
803.40	0.00	0.00	0.00	808.60	57.92	57.92	0.00
803.50	0.00	0.00	0.00	808.70	59.32	58.11	1.21
803.60	0.00	0.00	0.00	808.80	61.78	58.31	3.47
803.70	0.00	0.00	0.00	808.90	65.01	58.51	6.51
803.80	0.00	0.00	0.00	809.00	68.92	58.70	10.22
803.90	0.00	0.00	0.00	809.10	73.41	58.90	14.51
804.00	0.00	0.00	0.00	809.20	78.47	59.09	19.37
804.10	0.00	0.00	0.00	809.30	83.80	59.28	24.52
804.20	0.00	0.00	0.00	809.40	89.55	59.48	30.07
804.30	0.00	0.00	0.00	809.50	96.03	59.67	36.36
804.40	0.00	0.00	0.00	809.60	102.99	59.86	43.13
804.50	0.00	0.00	0.00	809.70	110.64	60.05	50.59
804.60	0.00	0.00	0.00	809.80	118.82	60.24	58.58
804.70	0.00	0.00	0.00	809.90	127.42	60.43	66.99
804.80	0.00	0.00	0.00	810.00	**136.54**	**60.62**	**75.92**
804.90	0.00	0.00	0.00				
805.00	0.00	0.00	0.00				
805.10	0.01	0.01	0.00				
805.20	0.01	0.01	0.00				
805.30	0.02	0.02	0.00				
805.40	0.02	0.02	0.00				
805.50	0.02	0.02	0.00				
805.60	0.02	0.02	0.00				
805.70	0.03	0.03	0.00				
805.80	0.03	0.03	0.00				
805.90	0.03	0.03	0.00				
806.00	0.03	0.03	0.00				
806.10	0.03	0.03	0.00				
806.20	0.03	0.03	0.00				
806.30	0.04	0.04	0.00				
806.40	0.04	0.04	0.00				
806.50	0.04	0.04	0.00				
806.60	0.04	0.04	0.00				
806.70	0.04	0.04	0.00				
806.80	0.04	0.04	0.00				
806.90	0.04	0.04	0.00				
807.00	0.04	0.04	0.00				
807.10	0.05	0.05	0.00				

Stage-Area-Storage for Pond 6-1P: DA-06 WET POND B

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	2,355	0	807.20	17,040	46,253
802.10	2,467	264	807.30	17,269	47,969
802.20	2,580	527	807.40	17,499	49,684
802.30	2,692	791	807.50	17,729	51,400
802.40	2,805	1,054	807.60	17,892	53,213
802.50	2,917	1,318	807.70	18,055	55,027
802.60	2,998	1,630	807.80	18,219	56,841
802.70	3,079	1,942	807.90	18,382	58,654
802.80	3,161	2,254	808.00	18,545	60,468
802.90	3,242	2,566	808.10	18,710	62,364
803.00	3,323	2,878	808.20	18,876	64,260
803.10	3,406	3,231	808.30	19,041	66,156
803.20	3,490	3,584	808.40	19,207	68,051
803.30	3,573	3,937	808.50	19,372	69,947
803.40	3,657	4,291	808.60	19,540	71,926
803.50	3,740	4,644	808.70	19,708	73,906
803.60	3,825	5,039	808.80	19,876	75,885
803.70	3,911	5,434	808.90	20,044	77,864
803.80	3,996	5,830	809.00	20,212	79,843
803.90	4,082	6,225	809.10	20,384	81,907
804.00	4,167	6,621	809.20	20,556	83,972
804.10	4,832	7,204	809.30	20,728	86,036
804.20	5,498	7,787	809.40	20,900	88,100
804.30	6,163	8,370	809.50	21,072	90,164
804.40	6,829	8,953	809.60	23,102	92,779
804.50	7,494	9,536	809.70	25,133	95,394
804.60	7,911	10,389	809.80	27,163	98,009
804.70	8,327	11,243	809.90	29,194	100,623
804.80	8,744	12,096	810.00	**31,224**	**103,238**
804.90	9,160	12,950			
805.00	9,577	13,804			
805.10	10,502	14,993			
805.20	11,427	16,182			
805.30	12,353	17,370			
805.40	13,278	18,559			
805.50	14,203	19,749			
805.60	14,359	21,208			
805.70	14,515	22,667			
805.80	14,670	24,126			
805.90	14,826	25,585			
806.00	14,982	27,045			
806.10	15,140	28,583			
806.20	15,299	30,120			
806.30	15,457	31,658			
806.40	15,616	33,196			
806.50	15,774	34,734			
806.60	15,935	36,351			
806.70	16,096	37,969			
806.80	16,258	39,587			
806.90	16,419	41,205			
807.00	16,580	42,822			
807.10	16,810	44,538			

Summary for Pond 6-2P: POND B FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	3,781 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	123	0	0
802.50	167	73	73
803.00	213	95	168
803.50	263	119	287
804.00	316	145	431
804.50	520	209	640
805.00	763	321	961
805.50	1,366	532	1,493
806.00	1,470	709	2,202
806.50	1,578	762	2,964
807.00	1,689	817	3,781

Stage-Discharge for Pond 6-2P: POND B FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
802.00	**0.00**	804.60	0.00
802.05	0.00	804.65	0.00
802.10	0.00	804.70	0.00
802.15	0.00	804.75	0.00
802.20	0.00	804.80	0.00
802.25	0.00	804.85	0.00
802.30	0.00	804.90	0.00
802.35	0.00	804.95	0.00
802.40	0.00	805.00	0.00
802.45	0.00	805.05	0.00
802.50	0.00	805.10	0.00
802.55	0.00	805.15	0.00
802.60	0.00	805.20	0.00
802.65	0.00	805.25	0.00
802.70	0.00	805.30	0.00
802.75	0.00	805.35	0.00
802.80	0.00	805.40	0.00
802.85	0.00	805.45	0.00
802.90	0.00	805.50	0.00
802.95	0.00	805.55	0.00
803.00	0.00	805.60	0.00
803.05	0.00	805.65	0.00
803.10	0.00	805.70	0.00
803.15	0.00	805.75	0.00
803.20	0.00	805.80	0.00
803.25	0.00	805.85	0.00
803.30	0.00	805.90	0.00
803.35	0.00	805.95	0.00
803.40	0.00	806.00	0.00
803.45	0.00	806.05	0.00
803.50	0.00	806.10	0.00
803.55	0.00	806.15	0.00
803.60	0.00	806.20	0.00
803.65	0.00	806.25	0.00
803.70	0.00	806.30	0.00
803.75	0.00	806.35	0.00
803.80	0.00	806.40	0.00
803.85	0.00	806.45	0.00
803.90	0.00	806.50	0.00
803.95	0.00	806.55	0.00
804.00	0.00	806.60	0.00
804.05	0.00	806.65	0.00
804.10	0.00	806.70	0.00
804.15	0.00	806.75	0.00
804.20	0.00	806.80	0.00
804.25	0.00	806.85	0.00
804.30	0.00	806.90	0.00
804.35	0.00	806.95	0.00
804.40	0.00	807.00	0.00
804.45	0.00		
804.50	0.00		
804.55	0.00		

Stage-Area-Storage for Pond 6-2P: POND B FOREBAY

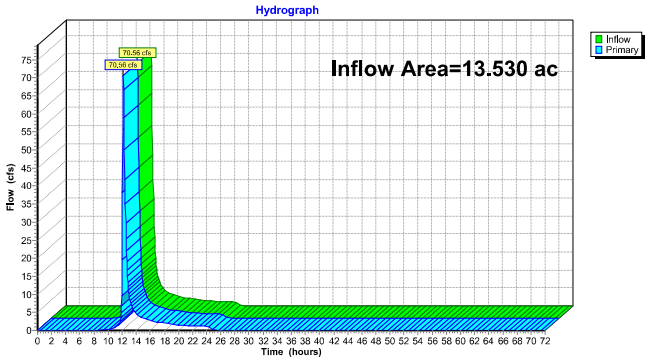
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
802.00	123	0	804.60	569	695
802.05	127	6	804.65	593	724
802.10	132	13	804.70	617	754
802.15	136	19	804.75	642	785
802.20	141	26	804.80	666	818
802.25	145	34	804.85	690	852
802.30	149	41	804.90	714	887
802.35	154	48	804.95	739	923
802.40	158	56	805.00	763	961
802.45	163	64	805.05	823	1,001
802.50	167	73	805.10	884	1,043
802.55	172	81	805.15	944	1,089
802.60	176	90	805.20	1,004	1,138
802.65	181	99	805.25	1,065	1,189
802.70	185	108	805.30	1,125	1,244
802.75	190	117	805.35	1,185	1,302
802.80	195	127	805.40	1,245	1,363
802.85	199	137	805.45	1,306	1,426
802.90	204	147	805.50	1,366	1,493
802.95	208	157	805.55	1,376	1,562
803.00	213	168	805.60	1,387	1,631
803.05	218	178	805.65	1,397	1,700
803.10	223	189	805.70	1,408	1,771
803.15	228	201	805.75	1,418	1,841
803.20	233	212	805.80	1,428	1,912
803.25	238	224	805.85	1,439	1,984
803.30	243	236	805.90	1,449	2,056
803.35	248	248	805.95	1,460	2,129
803.40	253	261	806.00	1,470	2,202
803.45	258	273	806.05	1,481	2,276
803.50	263	287	806.10	1,492	2,350
803.55	268	300	806.15	1,502	2,425
803.60	274	313	806.20	1,513	2,501
803.65	279	327	806.25	1,524	2,577
803.70	284	341	806.30	1,535	2,653
803.75	290	356	806.35	1,546	2,730
803.80	295	370	806.40	1,556	2,808
803.85	300	385	806.45	1,567	2,886
803.90	305	400	806.50	1,578	2,964
803.95	311	416	806.55	1,589	3,043
804.00	316	431	806.60	1,600	3,123
804.05	336	448	806.65	1,611	3,203
804.10	357	465	806.70	1,622	3,284
804.15	377	483	806.75	1,634	3,366
804.20	398	503	806.80	1,645	3,448
804.25	418	523	806.85	1,656	3,530
804.30	438	544	806.90	1,667	3,613
804.35	459	567	806.95	1,678	3,697
804.40	479	590	807.00	**1,689**	**3,781**
804.45	500	615			
804.50	520	640			
804.55	544	667			

Summary for Link 6-5L: POST DA-06 (POST ROUTING)

Inflow Area = 13.530 ac, 0.00% Impervious, Inflow Depth > 4.86" for 100-yr event
Inflow = 70.56 cfs @ 12.20 hrs, Volume= 5.479 af
Primary = 70.56 cfs @ 12.20 hrs, Volume= 5.479 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 6-5L: POST DA-06 (POST ROUTING)



DA-07

ONSITE

7-1S

PRE DA-07

Subcat Reach Pond Link

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 7-1S: PRE DA-07

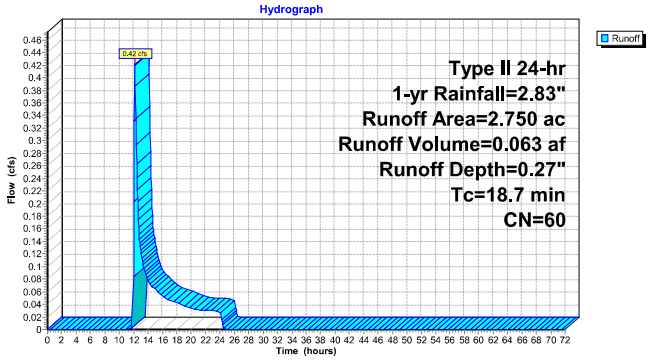
Runoff = 0.42 cfs @ 12.19 hrs, Volume= 0.063 af, Depth= 0.27"
Routed to nonexistent node 7-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	2.750	60	
	2.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.7					Direct Entry,

Subcatchment 7-1S: PRE DA-07



Summary for Subcatchment 7-1S: PRE DA-07

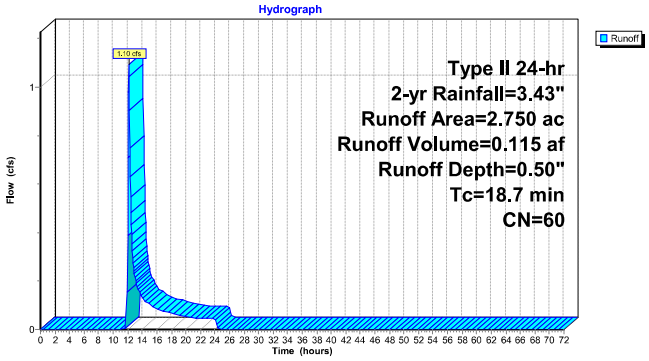
Runoff = 1.10 cfs @ 12.16 hrs, Volume= 0.115 af, Depth= 0.50"
Routed to nonexistent node 7-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	2.750	60	
	2.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.7					Direct Entry,

Subcatchment 7-1S: PRE DA-07



Summary for Subcatchment 7-1S: PRE DA-07

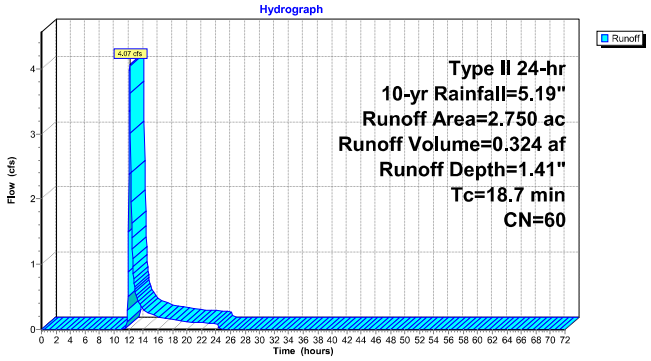
Runoff = 4.07 cfs @ 12.13 hrs, Volume= 0.324 af, Depth= 1.41"
Routed to nonexistent node 7-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	2.750	60	
	2.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.7					Direct Entry,

Subcatchment 7-1S: PRE DA-07



Summary for Subcatchment 7-1S: PRE DA-07

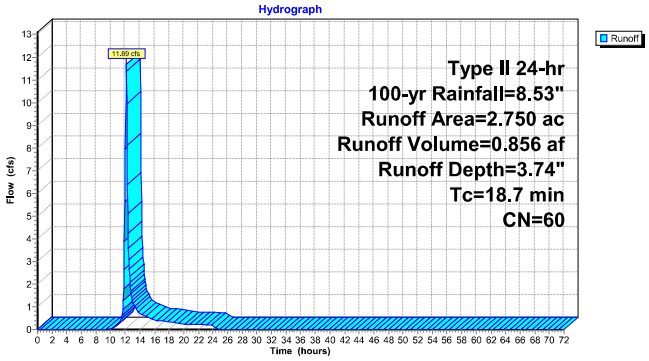
Runoff = 11.69 cfs @ 12.12 hrs, Volume= 0.856 af, Depth= 3.74"
Routed to nonexistent node 7-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 2.750	60	
2.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.7					Direct Entry,

Subcatchment 7-1S: PRE DA-07

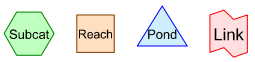


DA-08

ONSITE

8-1S

PRE DA-08



Routing Diagram for HydroCAD - Appomattox
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 8-1S: PRE DA-08

[49] Hint: Tc<2dt may require smaller dt

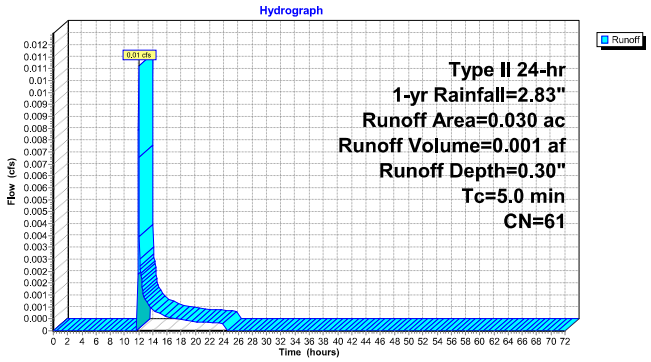
Runoff = 0.01 cfs @ 12.00 hrs, Volume= 0.001 af, Depth= 0.30"
Routed to nonexistent node 8-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

Area (ac)	CN	Description
* 0.030	61	
0.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 8-1S: PRE DA-08



Summary for Subcatchment 8-1S: PRE DA-08

[49] Hint: Tc<2dt may require smaller dt

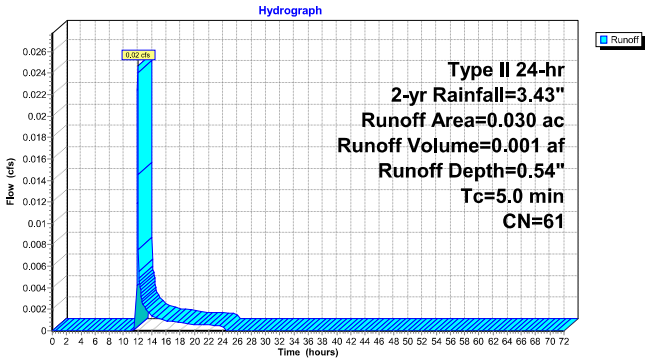
Runoff = 0.02 cfs @ 11.98 hrs, Volume= 0.001 af, Depth= 0.54"
Routed to nonexistent node 8-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

Area (ac)	CN	Description
* 0.030	61	
0.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 8-1S: PRE DA-08



Summary for Subcatchment 8-1S: PRE DA-08

[49] Hint: Tc<2dt may require smaller dt

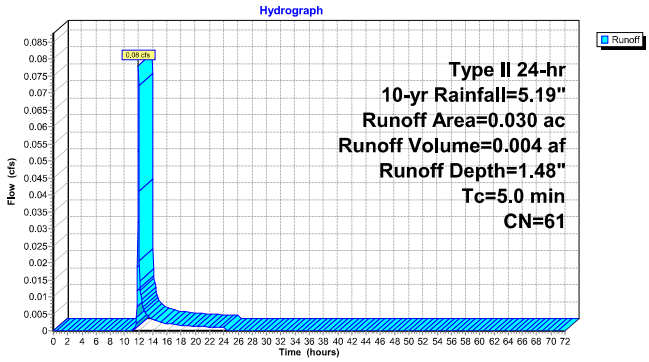
Runoff = 0.08 cfs @ 11.97 hrs, Volume= 0.004 af, Depth= 1.48"
Routed to nonexistent node 8-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

Area (ac)	CN	Description
* 0.030	61	
0.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 8-1S: PRE DA-08



Summary for Subcatchment 8-1S: PRE DA-08

[49] Hint: Tc<2dt may require smaller dt

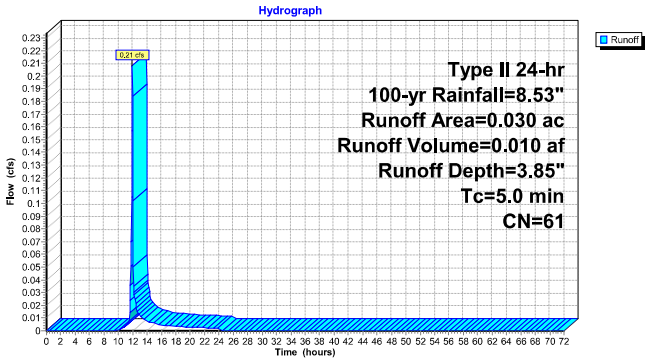
Runoff = 0.21 cfs @ 11.96 hrs, Volume= 0.010 af, Depth= 3.85"
Routed to nonexistent node 8-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 0.030	61	
0.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 8-1S: PRE DA-08



DA-09

ONSITE

9-1S

PRE DA-09

Subcat Reach Pond Link

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 9-1S: PRE DA-09

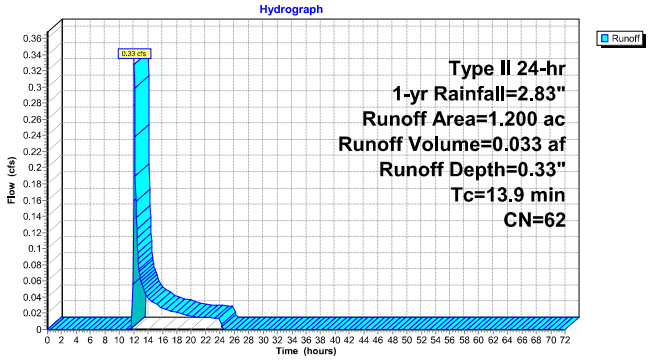
Runoff = 0.33 cfs @ 12.11 hrs, Volume= 0.033 af, Depth= 0.33"
Routed to nonexistent node 9-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	1.200	62	
	1.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9					Direct Entry,

Subcatchment 9-1S: PRE DA-09



Summary for Subcatchment 9-1S: PRE DA-09

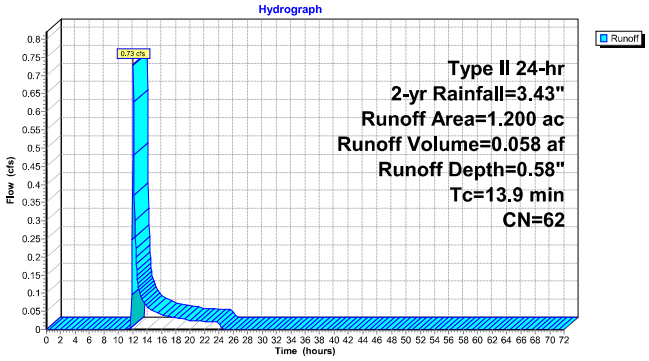
Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.058 af, Depth= 0.58"
Routed to nonexistent node 9-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	1.200	62	
	1.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9					Direct Entry,

Subcatchment 9-1S: PRE DA-09



Summary for Subcatchment 9-1S: PRE DA-09

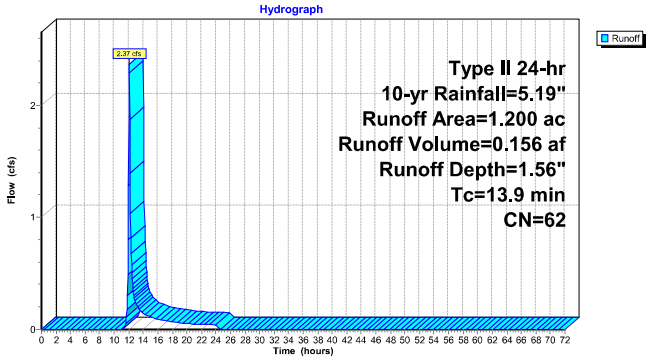
Runoff = 2.37 cfs @ 12.07 hrs, Volume= 0.156 af, Depth= 1.56"
Routed to nonexistent node 9-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	1.200	62	
	1.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9					Direct Entry,

Subcatchment 9-1S: PRE DA-09



Summary for Subcatchment 9-1S: PRE DA-09

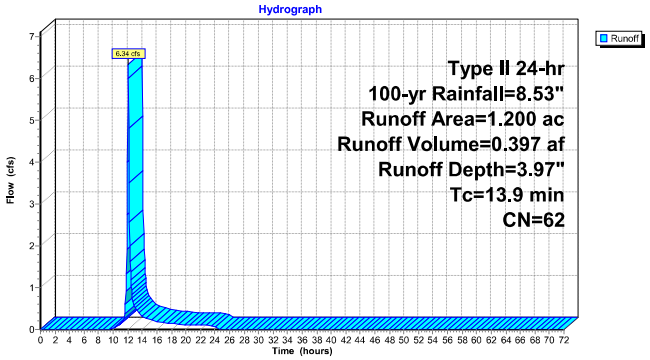
Runoff = 6.34 cfs @ 12.06 hrs, Volume= 0.397 af, Depth= 3.97"
Routed to nonexistent node 9-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 1.200	62	
1.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9					Direct Entry,

Subcatchment 9-1S: PRE DA-09

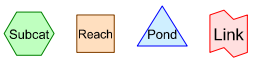


DA-10

ONSITE

10-1S

PRE DA-10



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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 10-1S: PRE DA-10

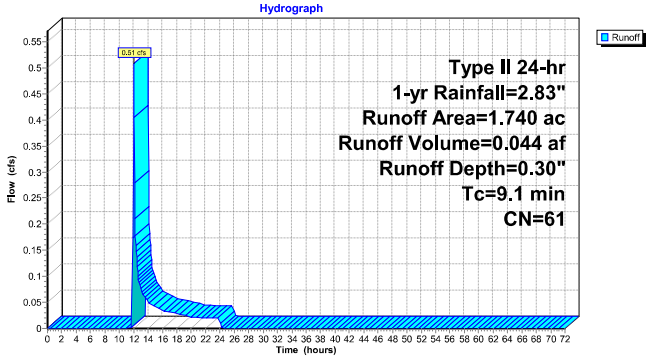
Runoff = 0.51 cfs @ 12.05 hrs, Volume= 0.044 af, Depth= 0.30"
Routed to nonexistent node 10-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

Area (ac)	CN	Description
* 1.740	61	
1.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					Direct Entry,

Subcatchment 10-1S: PRE DA-10



Summary for Subcatchment 10-1S: PRE DA-10

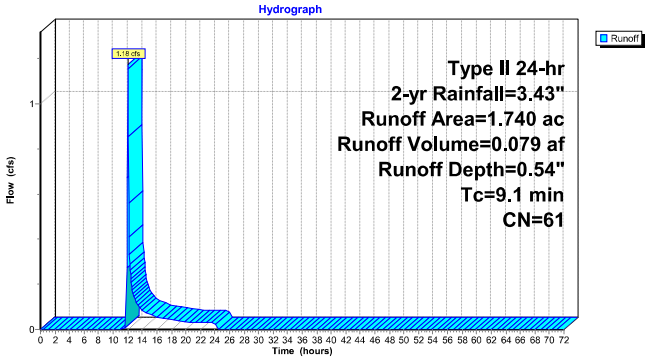
Runoff = 1.18 cfs @ 12.03 hrs, Volume= 0.079 af, Depth= 0.54"
Routed to nonexistent node 10-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

Area (ac)	CN	Description
* 1.740	61	
1.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					Direct Entry,

Subcatchment 10-1S: PRE DA-10



Summary for Subcatchment 10-1S: PRE DA-10

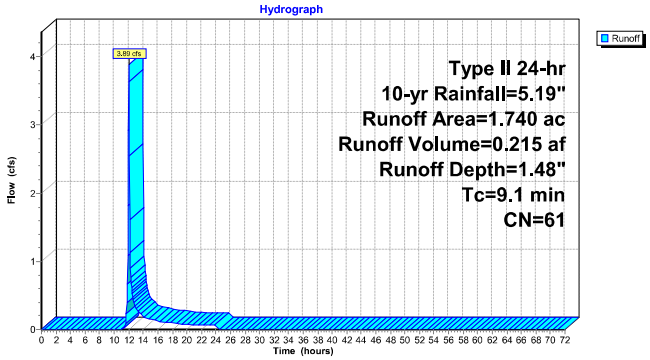
Runoff = 3.89 cfs @ 12.02 hrs, Volume= 0.215 af, Depth= 1.48"
Routed to nonexistent node 10-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

Area (ac)	CN	Description
* 1.740	61	
1.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					Direct Entry,

Subcatchment 10-1S: PRE DA-10



Summary for Subcatchment 10-1S: PRE DA-10

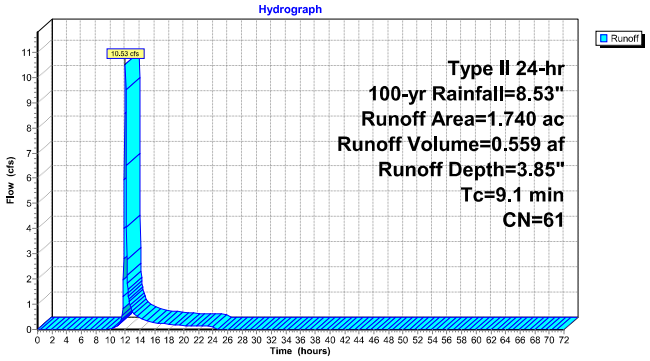
Runoff = 10.53 cfs @ 12.01 hrs, Volume= 0.559 af, Depth= 3.85"
Routed to nonexistent node 10-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 1.740	61	
1.740		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					Direct Entry,

Subcatchment 10-1S: PRE DA-10



DA-11

ONSITE

11-1S

PRE DA-11

Subcat Reach Pond Link

Routing Diagram for HydroCAD - Appomattox
Prepared by Kimley-Horn & Associates, Printed 10/23/2025
HydroCAD® 10.20-5c s/n 02344 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 11-1S: PRE DA-11

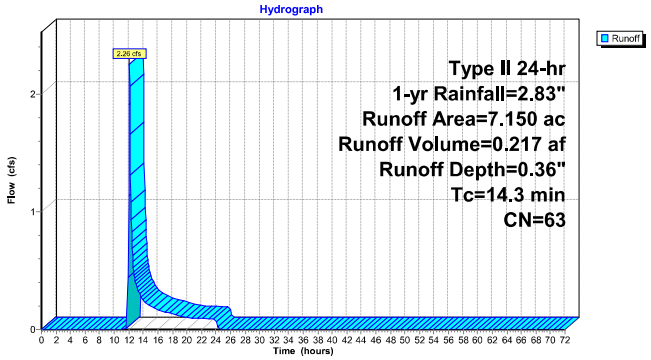
Runoff = 2.26 cfs @ 12.11 hrs, Volume= 0.217 af, Depth= 0.36"
Routed to nonexistent node 11-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	7.150	63	
	7.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3					Direct Entry,

Subcatchment 11-1S: PRE DA-11



Summary for Subcatchment 11-1S: PRE DA-11

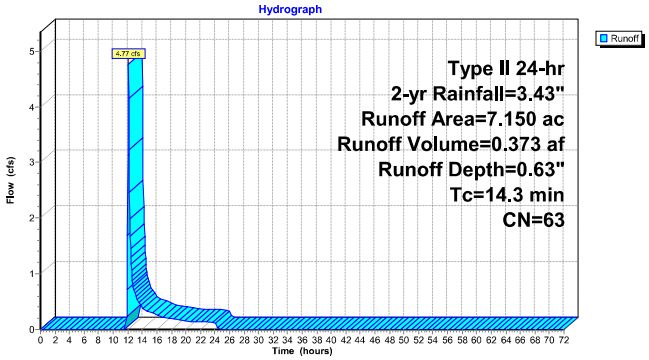
Runoff = 4.77 cfs @ 12.09 hrs, Volume= 0.373 af, Depth= 0.63"
Routed to nonexistent node 11-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	7.150	63	
	7.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3					Direct Entry,

Subcatchment 11-1S: PRE DA-11



Summary for Subcatchment 11-1S: PRE DA-11

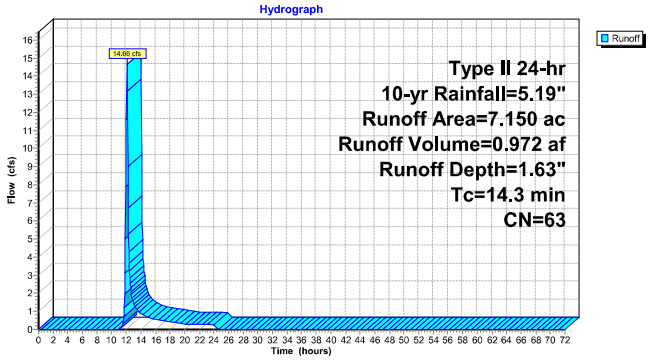
Runoff = 14.66 cfs @ 12.07 hrs, Volume= 0.972 af, Depth= 1.63"
Routed to nonexistent node 11-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	7.150	63	
	7.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3					Direct Entry,

Subcatchment 11-1S: PRE DA-11



Summary for Subcatchment 11-1S: PRE DA-11

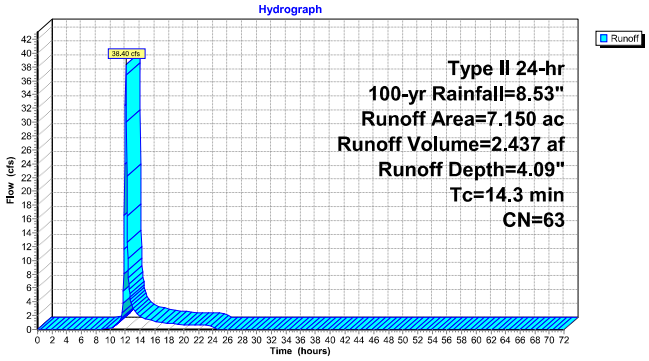
Runoff = 38.40 cfs @ 12.07 hrs, Volume= 2.437 af, Depth= 4.09"
Routed to nonexistent node 11-1L

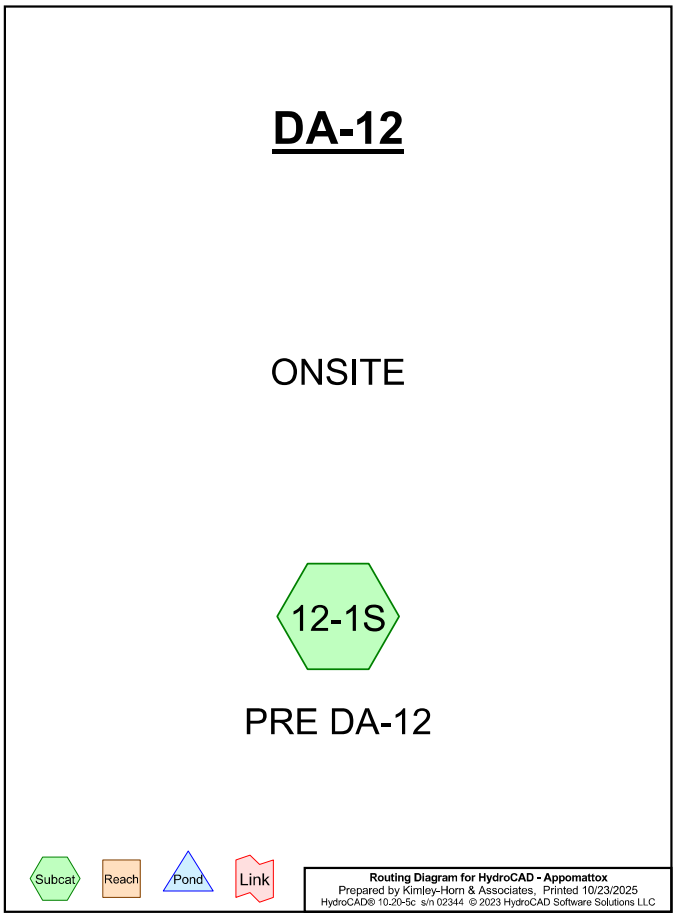
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 7.150	63	
7.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3					Direct Entry,

Subcatchment 11-1S: PRE DA-11





Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 12-1S: PRE DA-12

[49] Hint: Tc<2dt may require smaller dt

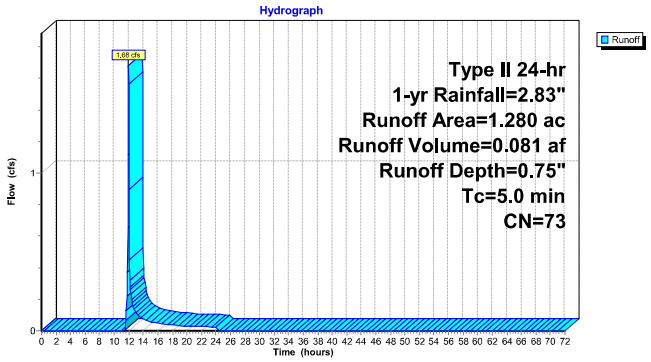
Runoff = 1.68 cfs @ 11.97 hrs, Volume= 0.081 af, Depth= 0.75"
Routed to nonexistent node 12-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

Area (ac)	CN	Description
* 1.280	73	
1.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 12-1S: PRE DA-12



Summary for Subcatchment 12-1S: PRE DA-12

[49] Hint: Tc<2dt may require smaller dt

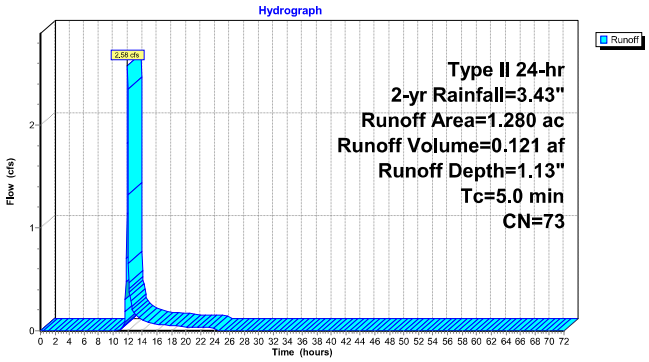
Runoff = 2.58 cfs @ 11.96 hrs, Volume= 0.121 af, Depth= 1.13"
Routed to nonexistent node 12-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	1.280	73	
	1.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 12-1S: PRE DA-12



Summary for Subcatchment 12-1S: PRE DA-12

[49] Hint: Tc<2dt may require smaller dt

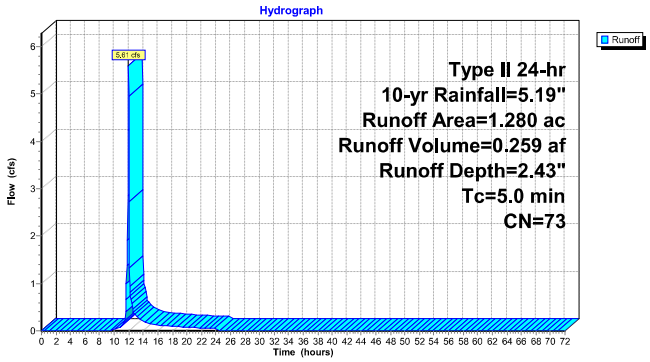
Runoff = 5.61 cfs @ 11.96 hrs, Volume= 0.259 af, Depth= 2.43"
Routed to nonexistent node 12-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	1.280	73	
	1.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 12-1S: PRE DA-12



Summary for Subcatchment 12-1S: PRE DA-12

[49] Hint: Tc<2dt may require smaller dt

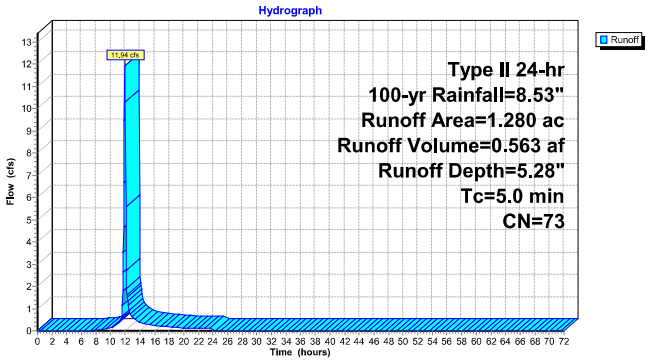
Runoff = 11.94 cfs @ 11.96 hrs, Volume= 0.563 af, Depth= 5.28"
Routed to nonexistent node 12-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	1.280	73	
	1.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 12-1S: PRE DA-12



DA-13

ONSITE

142S

PRE DA-13

Subcat Reach Pond Link

Routing Diagram for HydroCAD - Appomattox
Prepared by Kimley-Horn & Associates, Printed 10/23/2025
HydroCAD® 10.20-5c s/n 02344 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 142S: PRE DA-13

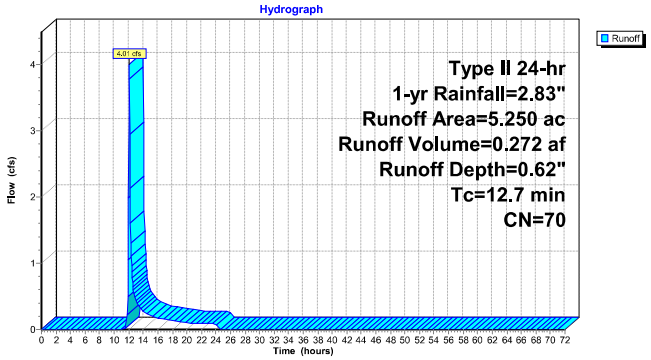
Runoff = 4.01 cfs @ 12.07 hrs, Volume= 0.272 af, Depth= 0.62"
Routed to nonexistent node 12-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	5.250	70	
	5.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7					Direct Entry,

Subcatchment 142S: PRE DA-13



Summary for Subcatchment 142S: PRE DA-13

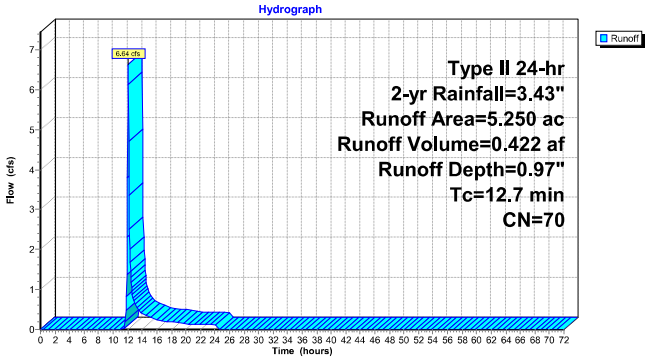
Runoff = 6.64 cfs @ 12.06 hrs, Volume= 0.422 af, Depth= 0.97"
Routed to nonexistent node 12-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	5.250	70	
	5.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7					Direct Entry,

Subcatchment 142S: PRE DA-13



Summary for Subcatchment 142S: PRE DA-13

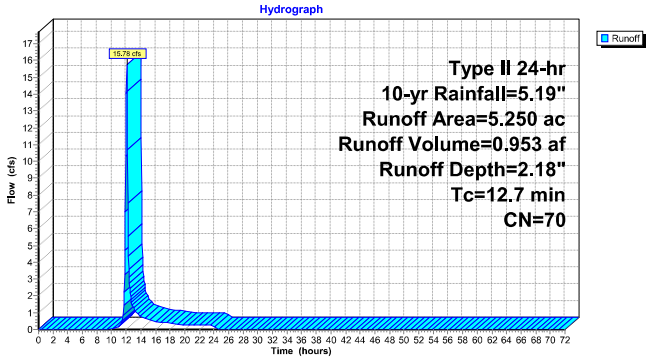
Runoff = 15.78 cfs @ 12.05 hrs, Volume= 0.953 af, Depth= 2.18"
Routed to nonexistent node 12-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	5.250	70	
	5.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7					Direct Entry,

Subcatchment 142S: PRE DA-13



Summary for Subcatchment 142S: PRE DA-13

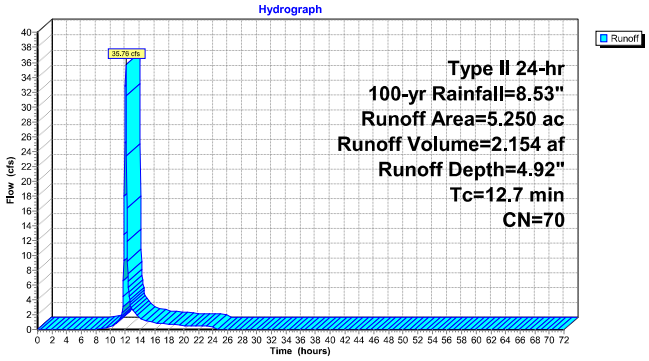
Runoff = 35.76 cfs @ 12.05 hrs, Volume= 2.154 af, Depth= 4.92"
Routed to nonexistent node 12-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	5.250	70	
	5.250		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7					Direct Entry,

Subcatchment 142S: PRE DA-13

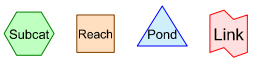


DA-14

ONSITE

14-1S

PRE DA-14



Routing Diagram for HydroCAD - Appomattox
Prepared by Kimley-Horn & Associates, Printed 10/23/2025
HydroCAD® 10.20-5c s/n 02344 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 14-1S: PRE DA-14

[49] Hint: Tc<2dt may require smaller dt

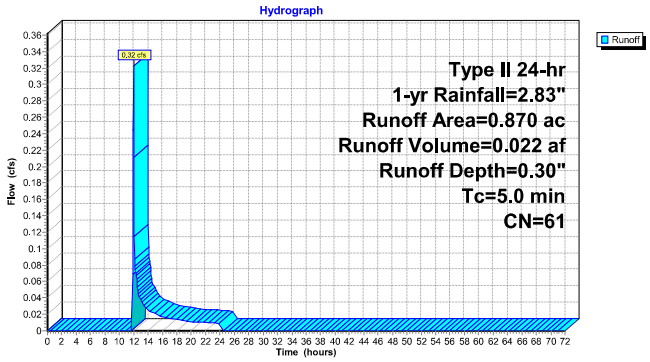
Runoff = 0.32 cfs @ 12.00 hrs, Volume= 0.022 af, Depth= 0.30"
Routed to nonexistent node 14-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	0.870	61	
	0.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 14-1S: PRE DA-14



Summary for Subcatchment 14-1S: PRE DA-14

[49] Hint: Tc<2dt may require smaller dt

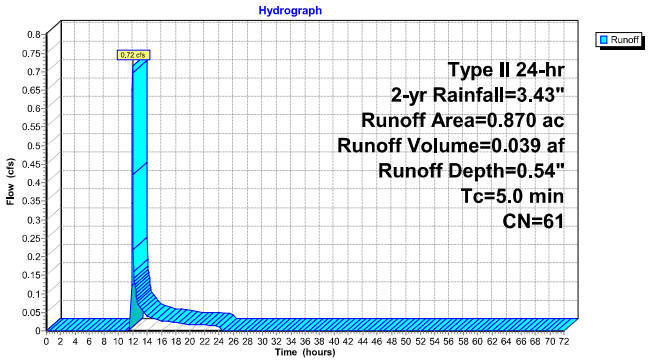
Runoff = 0.72 cfs @ 11.98 hrs, Volume= 0.039 af, Depth= 0.54"
Routed to nonexistent node 14-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	0.870	61	
	0.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 14-1S: PRE DA-14



Summary for Subcatchment 14-1S: PRE DA-14

[49] Hint: Tc<2dt may require smaller dt

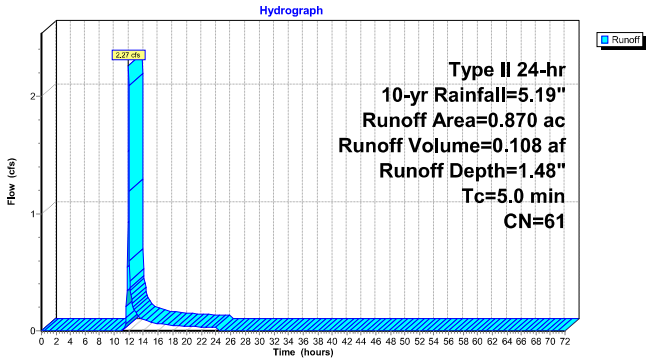
Runoff = 2.27 cfs @ 11.97 hrs, Volume= 0.108 af, Depth= 1.48"
Routed to nonexistent node 14-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	0.870	61	
	0.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 14-1S: PRE DA-14



Summary for Subcatchment 14-1S: PRE DA-14

[49] Hint: Tc<2dt may require smaller dt

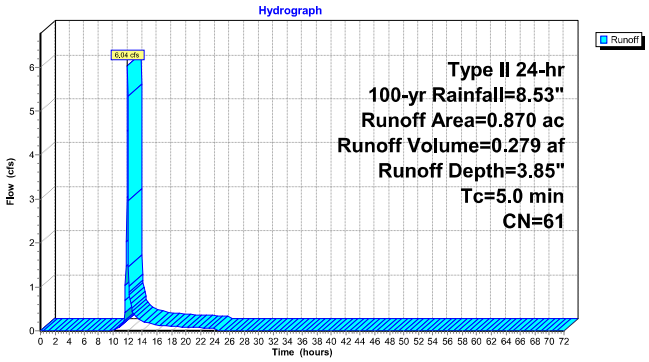
Runoff = 6.04 cfs @ 11.96 hrs, Volume= 0.279 af, Depth= 3.85"
Routed to nonexistent node 14-1L

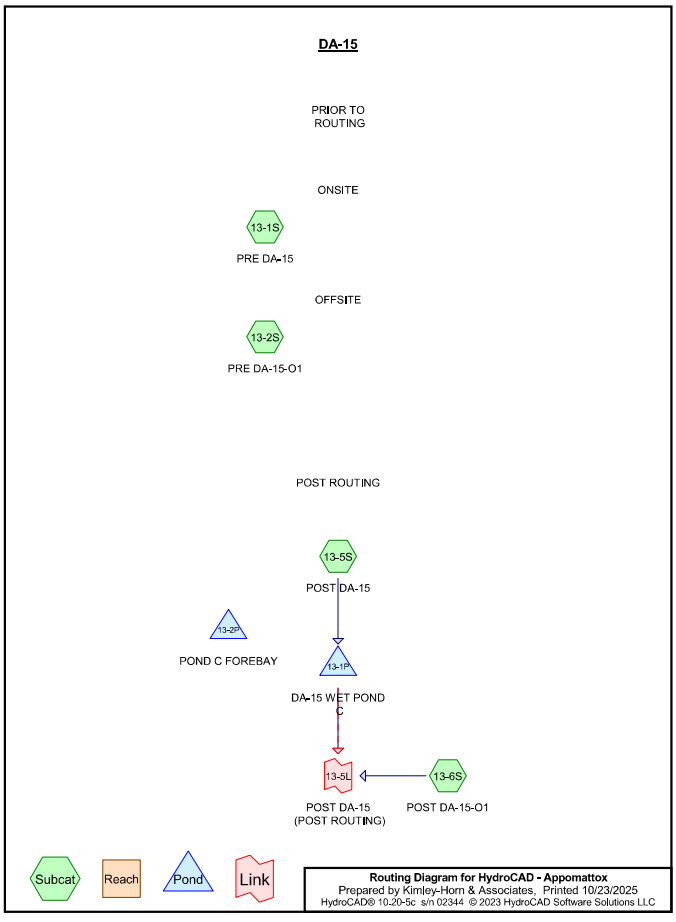
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	0.870	61	
	0.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 14-1S: PRE DA-14





Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.83	2
2	2-yr	Type II 24-hr		Default	24.00	1	3.43	2
3	10-yr	Type II 24-hr		Default	24.00	1	5.19	2
4	100-yr	Type II 24-hr		Default	24.00	1	8.53	2

Summary for Subcatchment 13-1S: PRE DA-15

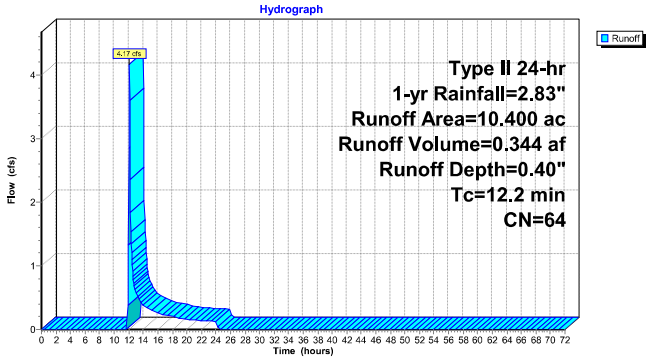
Runoff = 4.17 cfs @ 12.07 hrs, Volume= 0.344 af, Depth= 0.40"
Routed to nonexistent node 13-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	10.400	64	
	10.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2					Direct Entry,

Subcatchment 13-1S: PRE DA-15



Summary for Subcatchment 13-2S: PRE DA-15-O1

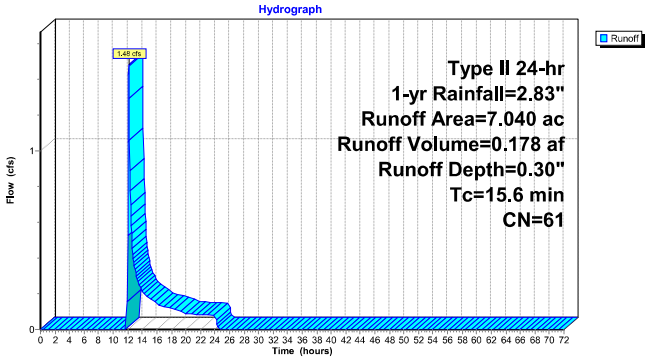
Runoff = 1.48 cfs @ 12.14 hrs, Volume= 0.178 af, Depth= 0.30"
Routed to nonexistent node 13-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	7.040	61	
	7.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6					Direct Entry,

Subcatchment 13-2S: PRE DA-15-O1



Summary for Subcatchment 13-5S: POST DA-15

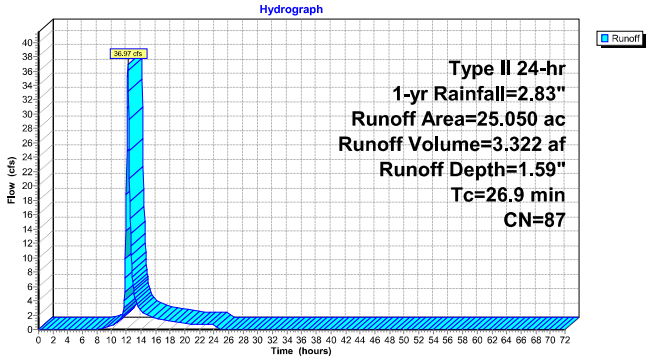
Runoff = 36.97 cfs @ 12.21 hrs, Volume= 3.322 af, Depth= 1.59"
Routed to Pond 13-1P : DA-15 WET POND C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

	Area (ac)	CN	Description
*	25.050	87	
	25.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9					Direct Entry,

Subcatchment 13-5S: POST DA-15



Summary for Subcatchment 13-6S: POST DA-15-O1

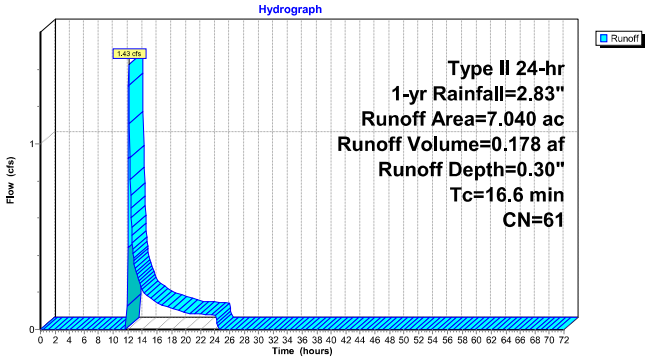
Runoff = 1.43 cfs @ 12.15 hrs, Volume= 0.178 af, Depth= 0.30"
Routed to Link 13-5L : POST DA-15 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.83"

Area (ac)	CN	Description
* 7.040	61	
7.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6					**Direct Entry,**

Subcatchment 13-6S: POST DA-15-O1



Summary for Pond 13-1P: DA-15 WET POND C

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth = 1.59" for 1-yr event
Inflow = 36.97 cfs @ 12.21 hrs, Volume= 3.322 af
Outflow = 0.71 cfs @ 23.42 hrs, Volume= 2.744 af, Atten= 98%, Lag= 672.6 min
Primary = 0.71 cfs @ 23.42 hrs, Volume= 2.744 af
Routed to Link 13-5L : POST DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 13-5L : POST DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 767.00' @ 23.42 hrs Surf.Area= 42,167 sf Storage= 186,078 cf (114,017 cf above start)

Plug-Flow detention time= 2,640.5 min calculated for 1.089 af (33% of inflow)
Center-of-Mass det. time= 1,458.7 min (2,299.1 - 840.4)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

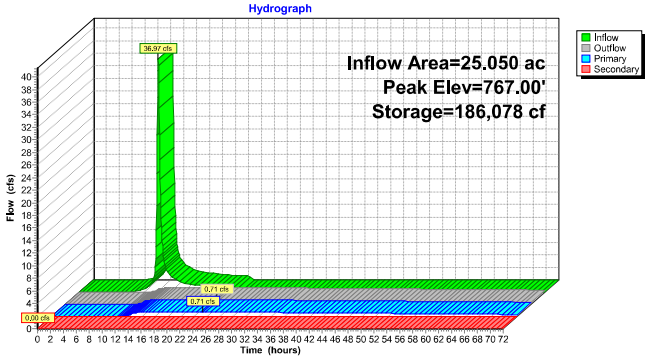
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**4.0" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.71 cfs @ 23.42 hrs HW=767.00' (Free Discharge)
└**1=CULVERT** (Passes 0.71 cfs of 50.57 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.71 cfs @ 8.10 fps)
└**3=TOP OF RISER** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 13-1P: DA-15 WET POND C



Stage-Discharge for Pond 13-1P: DA-15 WET POND C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00
760.20	0.00	0.00	0.00
760.40	0.00	0.00	0.00
760.60	0.00	0.00	0.00
760.80	0.00	0.00	0.00
761.00	0.00	0.00	0.00
761.20	0.00	0.00	0.00
761.40	0.00	0.00	0.00
761.60	0.00	0.00	0.00
761.80	0.00	0.00	0.00
762.00	0.00	0.00	0.00
762.20	0.00	0.00	0.00
762.40	0.00	0.00	0.00
762.60	0.00	0.00	0.00
762.80	0.00	0.00	0.00
763.00	0.00	0.00	0.00
763.20	0.00	0.00	0.00
763.40	0.00	0.00	0.00
763.60	0.00	0.00	0.00
763.80	0.00	0.00	0.00
764.00	0.00	0.00	0.00
764.20	0.08	0.08	0.00
764.40	0.20	0.20	0.00
764.60	0.28	0.28	0.00
764.80	0.33	0.33	0.00
765.00	0.38	0.38	0.00
765.20	0.43	0.43	0.00
765.40	0.47	0.47	0.00
765.60	0.50	0.50	0.00
765.80	0.54	0.54	0.00
766.00	0.57	0.57	0.00
766.20	0.60	0.60	0.00
766.40	0.63	0.63	0.00
766.60	0.66	0.66	0.00
766.80	0.68	0.68	0.00
767.00	0.71	0.71	0.00
767.20	0.73	0.73	0.00
767.40	0.76	0.76	0.00
767.60	0.78	0.78	0.00
767.80	5.40	5.40	0.00
768.00	13.82	13.82	0.00
768.20	24.72	24.72	0.00
768.40	37.62	37.62	0.00
768.60	52.25	52.25	0.00
768.80	56.94	56.94	0.00
769.00	57.60	57.60	0.00
769.20	58.26	58.26	0.00
769.40	59.63	58.91	0.72
769.60	67.81	59.55	8.26
769.80	80.63	60.19	20.44
770.00	96.78	60.81	35.96
770.20	115.26	61.44	53.82
770.40	137.17	62.05	75.11
770.60	162.28	62.66	99.62
770.80	189.81	63.26	126.55
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 13-1P: DA-15 WET POND C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	770.40	50,467	343,533
760.20	14,426	2,909	770.60	52,330	354,016
760.40	14,901	5,818	770.80	55,550	364,965
760.60	15,276	8,821	771.00	**58,770**	**375,914**
760.80	15,551	11,917			
761.00	15,826	15,014			
761.20	16,105	18,249			
761.40	16,384	21,483			
761.60	16,666	24,789			
761.80	16,949	28,165			
762.00	17,233	31,540			
762.20	17,521	35,059			
762.40	17,808	38,577			
762.60	18,098	42,168			
762.80	18,390	45,832			
763.00	18,682	49,495			
763.20	19,729	53,493			
763.40	20,776	57,491			
763.60	22,837	62,005			
763.80	25,910	67,033			
764.00	28,984	72,062			
764.20	31,774	78,556			
764.40	34,563	85,050			
764.60	36,190	91,951			
764.80	36,654	99,258			
765.00	37,118	106,566			
765.20	37,758	114,150			
765.40	38,397	121,733			
765.60	38,945	129,453			
765.80	39,400	137,311			
766.00	39,855	145,168			
766.20	40,316	153,254			
766.40	40,777	161,340			
766.60	41,240	169,542			
766.80	41,707	177,860			
767.00	42,173	186,178			
767.20	42,645	194,731			
767.40	43,116	203,283			
767.60	43,591	211,954			
767.80	44,068	220,744			
768.00	44,545	229,534			
768.20	45,028	238,563			
768.40	45,511	247,593			
768.60	45,996	256,744			
768.80	46,484	266,017			
769.00	46,972	275,289			
769.20	47,466	284,807			
769.40	47,959	294,325			
769.60	48,455	303,966			
769.80	48,954	313,732			
770.00	49,453	323,498			
770.20	49,960	333,516			

Summary for Pond 13-2P: POND C FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	12,407 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	982	0	0
760.50	1,069	513	513
761.00	1,159	557	1,070
761.50	1,253	603	1,673
762.00	1,350	651	2,324
762.50	1,451	700	3,024
763.00	1,556	752	3,776
763.50	1,930	872	4,647
764.00	2,343	1,068	5,715
764.50	3,287	1,408	7,123
765.00	3,442	1,682	8,805
765.50	3,601	1,761	10,566
766.00	3,763	1,841	12,407

Stage-Discharge for Pond 13-2P: POND C FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
760.00	**0.00**	762.60	0.00	765.20	0.00
760.05	0.00	762.65	0.00	765.25	0.00
760.10	0.00	762.70	0.00	765.30	0.00
760.15	0.00	762.75	0.00	765.35	0.00
760.20	0.00	762.80	0.00	765.40	0.00
760.25	0.00	762.85	0.00	765.45	0.00
760.30	0.00	762.90	0.00	765.50	0.00
760.35	0.00	762.95	0.00	765.55	0.00
760.40	0.00	763.00	0.00	765.60	0.00
760.45	0.00	763.05	0.00	765.65	0.00
760.50	0.00	763.10	0.00	765.70	0.00
760.55	0.00	763.15	0.00	765.75	0.00
760.60	0.00	763.20	0.00	765.80	0.00
760.65	0.00	763.25	0.00	765.85	0.00
760.70	0.00	763.30	0.00	765.90	0.00
760.75	0.00	763.35	0.00	765.95	0.00
760.80	0.00	763.40	0.00	766.00	0.00
760.85	0.00	763.45	0.00		
760.90	0.00	763.50	0.00		
760.95	0.00	763.55	0.00		
761.00	0.00	763.60	0.00		
761.05	0.00	763.65	0.00		
761.10	0.00	763.70	0.00		
761.15	0.00	763.75	0.00		
761.20	0.00	763.80	0.00		
761.25	0.00	763.85	0.00		
761.30	0.00	763.90	0.00		
761.35	0.00	763.95	0.00		
761.40	0.00	764.00	0.00		
761.45	0.00	764.05	0.00		
761.50	0.00	764.10	0.00		
761.55	0.00	764.15	0.00		
761.60	0.00	764.20	0.00		
761.65	0.00	764.25	0.00		
761.70	0.00	764.30	0.00		
761.75	0.00	764.35	0.00		
761.80	0.00	764.40	0.00		
761.85	0.00	764.45	0.00		
761.90	0.00	764.50	0.00		
761.95	0.00	764.55	0.00		
762.00	0.00	764.60	0.00		
762.05	0.00	764.65	0.00		
762.10	0.00	764.70	0.00		
762.15	0.00	764.75	0.00		
762.20	0.00	764.80	0.00		
762.25	0.00	764.85	0.00		
762.30	0.00	764.90	0.00		
762.35	0.00	764.95	0.00		
762.40	0.00	765.00	0.00		
762.45	0.00	765.05	0.00		
762.50	0.00	765.10	0.00		
762.55	0.00	765.15	0.00		

Stage-Area-Storage for Pond 13-2P: POND C FOREBAY

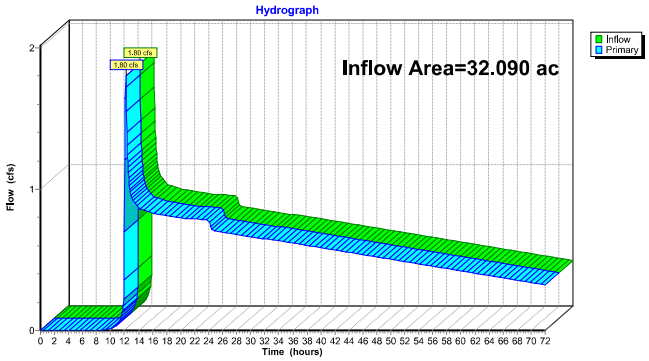
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	982	0	765.20	3,506	9,500
760.10	999	99	765.30	3,537	9,852
760.20	1,017	200	765.40	3,569	10,207
760.30	1,034	302	765.50	3,601	10,566
760.40	1,052	407	765.60	3,633	10,927
760.50	1,069	513	765.70	3,666	11,292
760.60	1,087	621	765.80	3,698	11,661
760.70	1,105	730	765.90	3,731	12,032
760.80	1,123	842	766.00	**3,763**	**12,407**
760.90	1,141	955			
761.00	1,159	1,070			
761.10	1,178	1,187			
761.20	1,197	1,305			
761.30	1,215	1,426			
761.40	1,234	1,548			
761.50	1,253	1,673			
761.60	1,272	1,799			
761.70	1,292	1,927			
761.80	1,311	2,057			
761.90	1,331	2,189			
762.00	1,350	2,324			
762.10	1,370	2,460			
762.20	1,390	2,598			
762.30	1,411	2,738			
762.40	1,431	2,880			
762.50	1,451	3,024			
762.60	1,472	3,170			
762.70	1,493	3,318			
762.80	1,514	3,468			
762.90	1,535	3,621			
763.00	1,556	3,776			
763.10	1,631	3,935			
763.20	1,706	4,102			
763.30	1,780	4,276			
763.40	1,855	4,458			
763.50	1,930	4,647			
763.60	2,013	4,844			
763.70	2,095	5,050			
763.80	2,178	5,263			
763.90	2,260	5,485			
764.00	2,343	5,715			
764.10	2,532	5,959			
764.20	2,721	6,222			
764.30	2,909	6,503			
764.40	3,098	6,803			
764.50	3,287	7,123			
764.60	3,318	7,453			
764.70	3,349	7,786			
764.80	3,380	8,123			
764.90	3,411	8,462			
765.00	3,442	8,805			
765.10	3,474	9,151			

Summary for Link 13-5L: POST DA-15 (POST ROUTING)

Inflow Area = 32.090 ac, 0.00% Impervious, Inflow Depth > 1.09" for 1-yr event
Inflow = 1.80 cfs @ 12.16 hrs, Volume= 2.921 af
Primary = 1.80 cfs @ 12.16 hrs, Volume= 2.921 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13-5L: POST DA-15 (POST ROUTING)



Summary for Subcatchment 13-1S: PRE DA-15

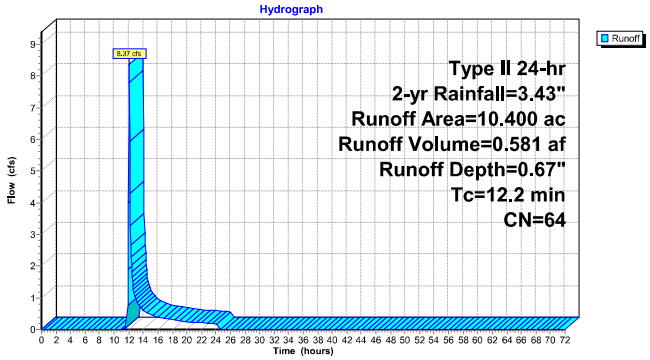
Runoff = 8.37 cfs @ 12.06 hrs, Volume= 0.581 af, Depth= 0.67"
Routed to nonexistent node 13-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	10.400	64	
	10.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2					Direct Entry,

Subcatchment 13-1S: PRE DA-15



Summary for Subcatchment 13-2S: PRE DA-15-O1

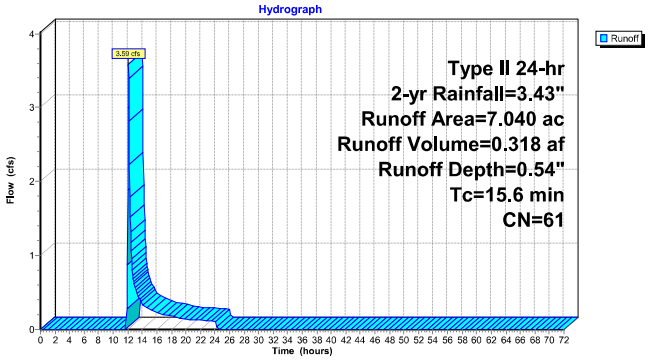
Runoff = 3.59 cfs @ 12.11 hrs, Volume= 0.318 af, Depth= 0.54"
Routed to nonexistent node 13-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	7.040	61	
	7.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6					Direct Entry,

Subcatchment 13-2S: PRE DA-15-O1



Summary for Subcatchment 13-5S: POST DA-15

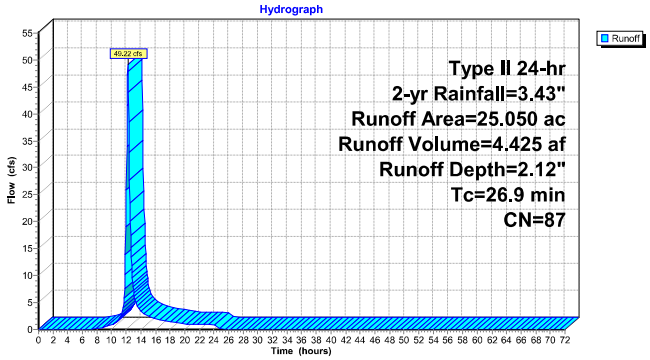
Runoff = 49.22 cfs @ 12.20 hrs, Volume= 4.425 af, Depth= 2.12"
Routed to Pond 13-1P : DA-15 WET POND C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

	Area (ac)	CN	Description
*	25.050	87	
	25.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9					Direct Entry,

Subcatchment 13-5S: POST DA-15



Summary for Subcatchment 13-6S: POST DA-15-O1

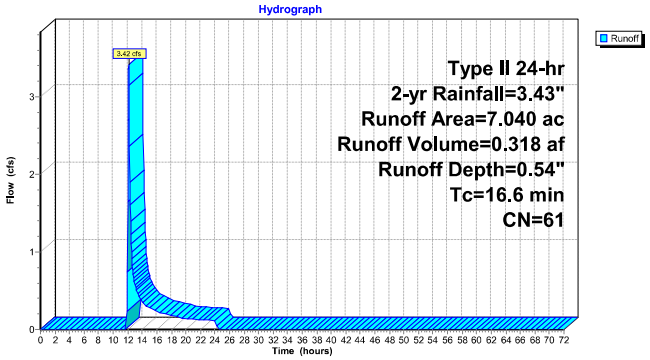
Runoff = 3.42 cfs @ 12.13 hrs, Volume= 0.318 af, Depth= 0.54"
Routed to Link 13-5L : POST DA-15 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=3.43"

Area (ac)	CN	Description
* 7.040	61	
7.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6					**Direct Entry,**

Subcatchment 13-6S: POST DA-15-O1



Summary for Pond 13-1P: DA-15 WET POND C

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth = 2.12" for 2-yr event
Inflow = 49.22 cfs @ 12.20 hrs, Volume= 4.425 af
Outflow = 1.84 cfs @ 16.23 hrs, Volume= 3.553 af, Atten= 96%, Lag= 241.6 min
Primary = 1.84 cfs @ 16.23 hrs, Volume= 3.553 af
Routed to Link 13-5L : POST DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 13-5L : POST DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 767.66' @ 16.23 hrs Surf.Area= 43,746 sf Storage= 214,810 cf (142,748 cf above start)

Plug-Flow detention time= 2,284.5 min calculated for 1.898 af (43% of inflow)
Center-of-Mass det. time= 1,349.2 min (2,181.5 - 832.3)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

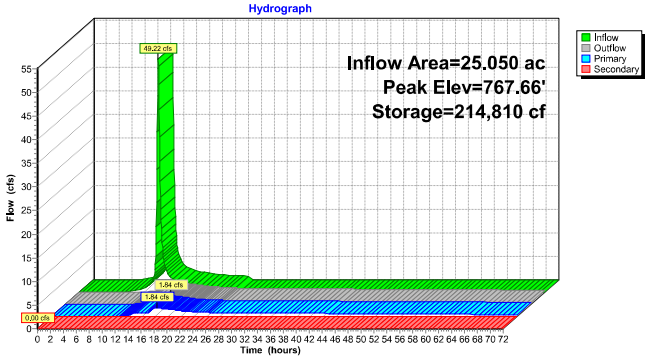
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**4.0" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.64 cfs @ 16.23 hrs HW=767.66' (Free Discharge)
└**1=CULVERT** (Passes 1.64 cfs of 53.02 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.79 cfs @ 9.01 fps)
└**3=TOP OF RISER** (Weir Controls 0.85 cfs @ 0.83 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 13-1P: DA-15 WET POND C



Stage-Discharge for Pond 13-1P: DA-15 WET POND C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00
760.20	0.00	0.00	0.00
760.40	0.00	0.00	0.00
760.60	0.00	0.00	0.00
760.80	0.00	0.00	0.00
761.00	0.00	0.00	0.00
761.20	0.00	0.00	0.00
761.40	0.00	0.00	0.00
761.60	0.00	0.00	0.00
761.80	0.00	0.00	0.00
762.00	0.00	0.00	0.00
762.20	0.00	0.00	0.00
762.40	0.00	0.00	0.00
762.60	0.00	0.00	0.00
762.80	0.00	0.00	0.00
763.00	0.00	0.00	0.00
763.20	0.00	0.00	0.00
763.40	0.00	0.00	0.00
763.60	0.00	0.00	0.00
763.80	0.00	0.00	0.00
764.00	0.00	0.00	0.00
764.20	0.08	0.08	0.00
764.40	0.20	0.20	0.00
764.60	0.28	0.28	0.00
764.80	0.33	0.33	0.00
765.00	0.38	0.38	0.00
765.20	0.43	0.43	0.00
765.40	0.47	0.47	0.00
765.60	0.50	0.50	0.00
765.80	0.54	0.54	0.00
766.00	0.57	0.57	0.00
766.20	0.60	0.60	0.00
766.40	0.63	0.63	0.00
766.60	0.66	0.66	0.00
766.80	0.68	0.68	0.00
767.00	0.71	0.71	0.00
767.20	0.73	0.73	0.00
767.40	0.76	0.76	0.00
767.60	0.78	0.78	0.00
767.80	5.40	5.40	0.00
768.00	13.82	13.82	0.00
768.20	24.72	24.72	0.00
768.40	37.62	37.62	0.00
768.60	52.25	52.25	0.00
768.80	56.94	56.94	0.00
769.00	57.60	57.60	0.00
769.20	58.26	58.26	0.00
769.40	59.63	58.91	0.72
769.60	67.81	59.55	8.26
769.80	80.63	60.19	20.44
770.00	96.78	60.81	35.96
770.20	115.26	61.44	53.82
770.40	137.17	62.05	75.11
770.60	162.28	62.66	99.62
770.80	189.81	63.26	126.55
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 13-1P: DA-15 WET POND C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	770.40	50,467	343,533
760.20	14,426	2,909	770.60	52,330	354,016
760.40	14,901	5,818	770.80	55,550	364,965
760.60	15,276	8,821	771.00	**58,770**	**375,914**
760.80	15,551	11,917			
761.00	15,826	15,014			
761.20	16,105	18,249			
761.40	16,384	21,483			
761.60	16,666	24,789			
761.80	16,949	28,165			
762.00	17,233	31,540			
762.20	17,521	35,059			
762.40	17,808	38,577			
762.60	18,098	42,168			
762.80	18,390	45,832			
763.00	18,682	49,495			
763.20	19,729	53,493			
763.40	20,776	57,491			
763.60	22,837	62,005			
763.80	25,910	67,033			
764.00	28,984	72,062			
764.20	31,774	78,556			
764.40	34,563	85,050			
764.60	36,190	91,951			
764.80	36,654	99,258			
765.00	37,118	106,566			
765.20	37,758	114,150			
765.40	38,397	121,733			
765.60	38,945	129,453			
765.80	39,400	137,311			
766.00	39,855	145,168			
766.20	40,316	153,254			
766.40	40,777	161,340			
766.60	41,240	169,542			
766.80	41,707	177,860			
767.00	42,173	186,178			
767.20	42,645	194,731			
767.40	43,116	203,283			
767.60	43,591	211,954			
767.80	44,068	220,744			
768.00	44,545	229,534			
768.20	45,028	238,563			
768.40	45,511	247,593			
768.60	45,996	256,744			
768.80	46,484	266,017			
769.00	46,972	275,289			
769.20	47,466	284,807			
769.40	47,959	294,325			
769.60	48,455	303,966			
769.80	48,954	313,732			
770.00	49,453	323,498			
770.20	49,960	333,516			

Summary for Pond 13-2P: POND C FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	12,407 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	982	0	0
760.50	1,069	513	513
761.00	1,159	557	1,070
761.50	1,253	603	1,673
762.00	1,350	651	2,324
762.50	1,451	700	3,024
763.00	1,556	752	3,776
763.50	1,930	872	4,647
764.00	2,343	1,068	5,715
764.50	3,287	1,408	7,123
765.00	3,442	1,682	8,805
765.50	3,601	1,761	10,566
766.00	3,763	1,841	12,407

Stage-Discharge for Pond 13-2P: POND C FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
760.00	**0.00**	762.60	0.00	765.20	0.00
760.05	0.00	762.65	0.00	765.25	0.00
760.10	0.00	762.70	0.00	765.30	0.00
760.15	0.00	762.75	0.00	765.35	0.00
760.20	0.00	762.80	0.00	765.40	0.00
760.25	0.00	762.85	0.00	765.45	0.00
760.30	0.00	762.90	0.00	765.50	0.00
760.35	0.00	762.95	0.00	765.55	0.00
760.40	0.00	763.00	0.00	765.60	0.00
760.45	0.00	763.05	0.00	765.65	0.00
760.50	0.00	763.10	0.00	765.70	0.00
760.55	0.00	763.15	0.00	765.75	0.00
760.60	0.00	763.20	0.00	765.80	0.00
760.65	0.00	763.25	0.00	765.85	0.00
760.70	0.00	763.30	0.00	765.90	0.00
760.75	0.00	763.35	0.00	765.95	0.00
760.80	0.00	763.40	0.00	766.00	0.00
760.85	0.00	763.45	0.00		
760.90	0.00	763.50	0.00		
760.95	0.00	763.55	0.00		
761.00	0.00	763.60	0.00		
761.05	0.00	763.65	0.00		
761.10	0.00	763.70	0.00		
761.15	0.00	763.75	0.00		
761.20	0.00	763.80	0.00		
761.25	0.00	763.85	0.00		
761.30	0.00	763.90	0.00		
761.35	0.00	763.95	0.00		
761.40	0.00	764.00	0.00		
761.45	0.00	764.05	0.00		
761.50	0.00	764.10	0.00		
761.55	0.00	764.15	0.00		
761.60	0.00	764.20	0.00		
761.65	0.00	764.25	0.00		
761.70	0.00	764.30	0.00		
761.75	0.00	764.35	0.00		
761.80	0.00	764.40	0.00		
761.85	0.00	764.45	0.00		
761.90	0.00	764.50	0.00		
761.95	0.00	764.55	0.00		
762.00	0.00	764.60	0.00		
762.05	0.00	764.65	0.00		
762.10	0.00	764.70	0.00		
762.15	0.00	764.75	0.00		
762.20	0.00	764.80	0.00		
762.25	0.00	764.85	0.00		
762.30	0.00	764.90	0.00		
762.35	0.00	764.95	0.00		
762.40	0.00	765.00	0.00		
762.45	0.00	765.05	0.00		
762.50	0.00	765.10	0.00		
762.55	0.00	765.15	0.00		

Stage-Area-Storage for Pond 13-2P: POND C FOREBAY

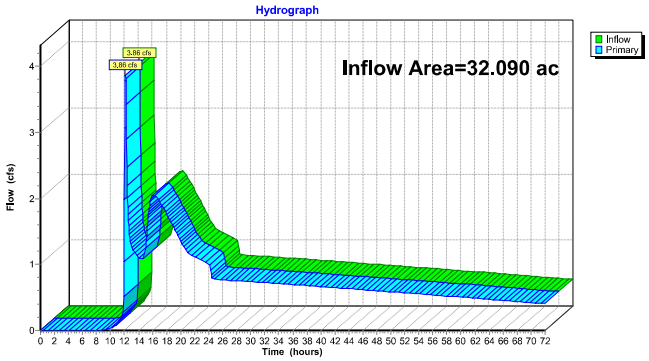
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	982	0	765.20	3,506	9,500
760.10	999	99	765.30	3,537	9,852
760.20	1,017	200	765.40	3,569	10,207
760.30	1,034	302	765.50	3,601	10,566
760.40	1,052	407	765.60	3,633	10,927
760.50	1,069	513	765.70	3,666	11,292
760.60	1,087	621	765.80	3,698	11,661
760.70	1,105	730	765.90	3,731	12,032
760.80	1,123	842	766.00	**3,763**	**12,407**
760.90	1,141	955			
761.00	1,159	1,070			
761.10	1,178	1,187			
761.20	1,197	1,305			
761.30	1,215	1,426			
761.40	1,234	1,548			
761.50	1,253	1,673			
761.60	1,272	1,799			
761.70	1,292	1,927			
761.80	1,311	2,057			
761.90	1,331	2,189			
762.00	1,350	2,324			
762.10	1,370	2,460			
762.20	1,390	2,598			
762.30	1,411	2,738			
762.40	1,431	2,880			
762.50	1,451	3,024			
762.60	1,472	3,170			
762.70	1,493	3,318			
762.80	1,514	3,468			
762.90	1,535	3,621			
763.00	1,556	3,776			
763.10	1,631	3,935			
763.20	1,706	4,102			
763.30	1,780	4,276			
763.40	1,855	4,458			
763.50	1,930	4,647			
763.60	2,013	4,844			
763.70	2,095	5,050			
763.80	2,178	5,263			
763.90	2,260	5,485			
764.00	2,343	5,715			
764.10	2,532	5,959			
764.20	2,721	6,222			
764.30	2,909	6,503			
764.40	3,098	6,803			
764.50	3,287	7,123			
764.60	3,318	7,453			
764.70	3,349	7,786			
764.80	3,380	8,123			
764.90	3,411	8,462			
765.00	3,442	8,805			
765.10	3,474	9,151			

Summary for Link 13-5L: POST DA-15 (POST ROUTING)

Inflow Area = 32.090 ac, 0.00% Impervious, Inflow Depth > 1.45" for 2-yr event
Inflow = 3.86 cfs @ 12.13 hrs, Volume= 3.870 af
Primary = 3.86 cfs @ 12.13 hrs, Volume= 3.870 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13-5L: POST DA-15 (POST ROUTING)



Summary for Subcatchment 13-1S: PRE DA-15

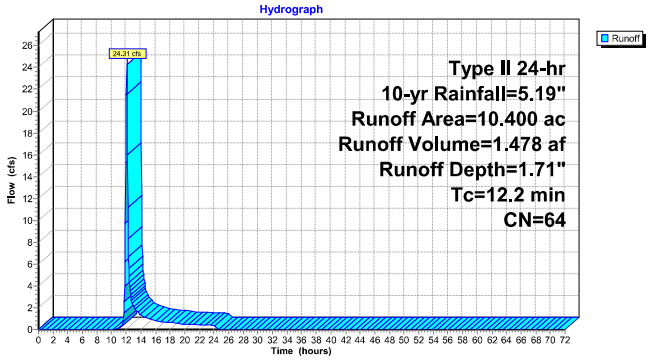
Runoff = 24.31 cfs @ 12.05 hrs, Volume= 1.478 af, Depth= 1.71"
Routed to nonexistent node 13-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	10.400	64	
	10.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2					Direct Entry,

Subcatchment 13-1S: PRE DA-15



Summary for Subcatchment 13-2S: PRE DA-15-O1

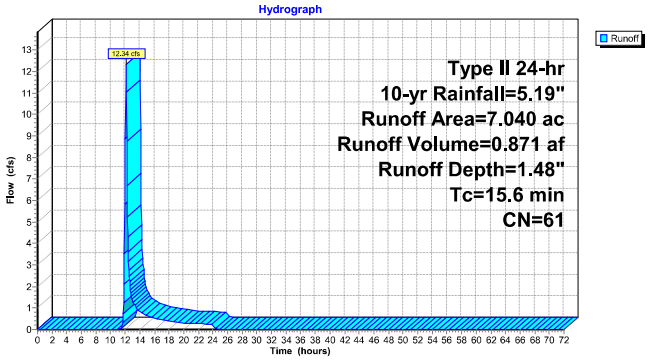
Runoff = 12.34 cfs @ 12.09 hrs, Volume= 0.871 af, Depth= 1.48"
Routed to nonexistent node 13-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	7.040	61	
	7.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6					Direct Entry,

Subcatchment 13-2S: PRE DA-15-O1



Summary for Subcatchment 13-5S: POST DA-15

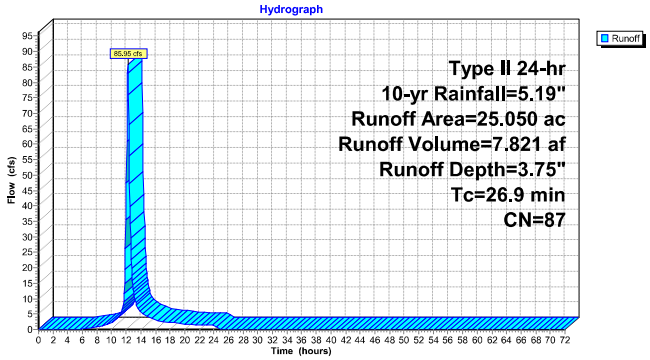
Runoff = 85.95 cfs @ 12.20 hrs, Volume= 7.821 af, Depth= 3.75"
Routed to Pond 13-1P : DA-15 WET POND C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

	Area (ac)	CN	Description
*	25.050	87	
	25.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9					Direct Entry,

Subcatchment 13-5S: POST DA-15



Summary for Subcatchment 13-6S: POST DA-15-O1

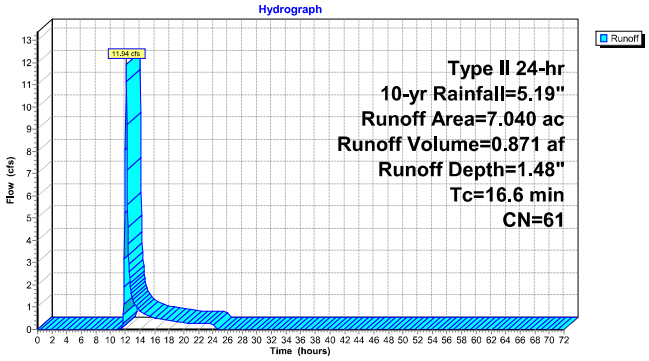
Runoff = 11.94 cfs @ 12.11 hrs, Volume= 0.871 af, Depth= 1.48"
Routed to Link 13-5L : POST DA-15 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=5.19"

Area (ac)	CN	Description
* 7.040	61	
7.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6					**Direct Entry,**

Subcatchment 13-6S: POST DA-15-O1



Summary for Pond 13-1P: DA-15 WET POND C

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth = 3.75" for 10-yr event
Inflow = 85.95 cfs @ 12.20 hrs, Volume= 7.821 af
Outflow = 31.41 cfs @ 12.58 hrs, Volume= 6.937 af, Atten= 63%, Lag= 22.9 min
Primary = 31.41 cfs @ 12.58 hrs, Volume= 6.937 af
Routed to Link 13-5L : POST DA-15 (POST ROUTING)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 13-5L : POST DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 768.31' @ 12.58 hrs Surf.Area= 45,284 sf Storage= 243,360 cf (171,298 cf above start)

Plug-Flow detention time= 1,067.1 min calculated for 5.279 af (67% of inflow)
Center-of-Mass det. time= 723.6 min (1,539.7 - 816.1)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

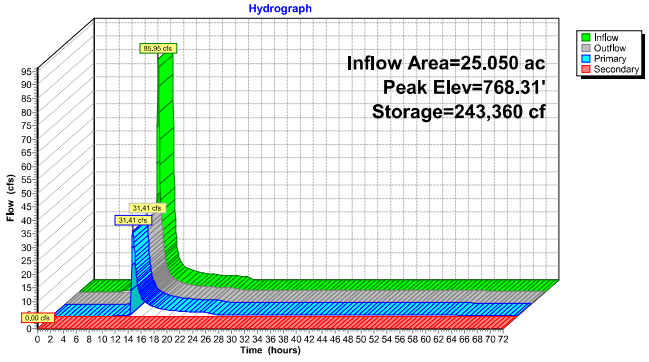
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**4.0" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=31.23 cfs @ 12.58 hrs HW=768.30' (Free Discharge)
└**1=CULVERT** (Passes 31.23 cfs of 55.26 cfs potential flow)
└**2=1-YR CONTROL** (Orifice Controls 0.85 cfs @ 9.79 fps)
└**3=TOP OF RISER** (Weir Controls 30.37 cfs @ 2.74 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=764.00' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Controls 0.00 cfs)

Pond 13-1P: DA-15 WET POND C



Stage-Discharge for Pond 13-1P: DA-15 WET POND C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00
760.20	0.00	0.00	0.00
760.40	0.00	0.00	0.00
760.60	0.00	0.00	0.00
760.80	0.00	0.00	0.00
761.00	0.00	0.00	0.00
761.20	0.00	0.00	0.00
761.40	0.00	0.00	0.00
761.60	0.00	0.00	0.00
761.80	0.00	0.00	0.00
762.00	0.00	0.00	0.00
762.20	0.00	0.00	0.00
762.40	0.00	0.00	0.00
762.60	0.00	0.00	0.00
762.80	0.00	0.00	0.00
763.00	0.00	0.00	0.00
763.20	0.00	0.00	0.00
763.40	0.00	0.00	0.00
763.60	0.00	0.00	0.00
763.80	0.00	0.00	0.00
764.00	0.00	0.00	0.00
764.20	0.08	0.08	0.00
764.40	0.20	0.20	0.00
764.60	0.28	0.28	0.00
764.80	0.33	0.33	0.00
765.00	0.38	0.38	0.00
765.20	0.43	0.43	0.00
765.40	0.47	0.47	0.00
765.60	0.50	0.50	0.00
765.80	0.54	0.54	0.00
766.00	0.57	0.57	0.00
766.20	0.60	0.60	0.00
766.40	0.63	0.63	0.00
766.60	0.66	0.66	0.00
766.80	0.68	0.68	0.00
767.00	0.71	0.71	0.00
767.20	0.73	0.73	0.00
767.40	0.76	0.76	0.00
767.60	0.78	0.78	0.00
767.80	5.40	5.40	0.00
768.00	13.82	13.82	0.00
768.20	24.72	24.72	0.00
768.40	37.62	37.62	0.00
768.60	52.25	52.25	0.00
768.80	56.94	56.94	0.00
769.00	57.60	57.60	0.00
769.20	58.26	58.26	0.00
769.40	59.63	58.91	0.72
769.60	67.81	59.55	8.26
769.80	80.63	60.19	20.44
770.00	96.78	60.81	35.96
770.20	115.26	61.44	53.82
770.40	137.17	62.05	75.11
770.60	162.28	62.66	99.62
770.80	189.81	63.26	126.55
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 13-1P: DA-15 WET POND C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	770.40	50,467	343,533
760.20	14,426	2,909	770.60	52,330	354,016
760.40	14,901	5,818	770.80	55,550	364,965
760.60	15,276	8,821	771.00	**58,770**	**375,914**
760.80	15,551	11,917			
761.00	15,826	15,014			
761.20	16,105	18,249			
761.40	16,384	21,483			
761.60	16,666	24,789			
761.80	16,949	28,165			
762.00	17,233	31,540			
762.20	17,521	35,059			
762.40	17,808	38,577			
762.60	18,098	42,168			
762.80	18,390	45,832			
763.00	18,682	49,495			
763.20	19,729	53,493			
763.40	20,776	57,491			
763.60	22,837	62,005			
763.80	25,910	67,033			
764.00	28,984	72,062			
764.20	31,774	78,556			
764.40	34,563	85,050			
764.60	36,190	91,951			
764.80	36,654	99,258			
765.00	37,118	106,566			
765.20	37,758	114,150			
765.40	38,397	121,733			
765.60	38,945	129,453			
765.80	39,400	137,311			
766.00	39,855	145,168			
766.20	40,316	153,254			
766.40	40,777	161,340			
766.60	41,240	169,542			
766.80	41,707	177,860			
767.00	42,173	186,178			
767.20	42,645	194,731			
767.40	43,116	203,283			
767.60	43,591	211,954			
767.80	44,068	220,744			
768.00	44,545	229,534			
768.20	45,028	238,563			
768.40	45,511	247,593			
768.60	45,996	256,744			
768.80	46,484	266,017			
769.00	46,972	275,289			
769.20	47,466	284,807			
769.40	47,959	294,325			
769.60	48,455	303,966			
769.80	48,954	313,732			
770.00	49,453	323,498			
770.20	49,960	333,516			

Summary for Pond 13-2P: POND C FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	12,407 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	982	0	0
760.50	1,069	513	513
761.00	1,159	557	1,070
761.50	1,253	603	1,673
762.00	1,350	651	2,324
762.50	1,451	700	3,024
763.00	1,556	752	3,776
763.50	1,930	872	4,647
764.00	2,343	1,068	5,715
764.50	3,287	1,408	7,123
765.00	3,442	1,682	8,805
765.50	3,601	1,761	10,566
766.00	3,763	1,841	12,407

Stage-Discharge for Pond 13-2P: POND C FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
760.00	**0.00**	762.60	0.00	765.20	0.00
760.05	0.00	762.65	0.00	765.25	0.00
760.10	0.00	762.70	0.00	765.30	0.00
760.15	0.00	762.75	0.00	765.35	0.00
760.20	0.00	762.80	0.00	765.40	0.00
760.25	0.00	762.85	0.00	765.45	0.00
760.30	0.00	762.90	0.00	765.50	0.00
760.35	0.00	762.95	0.00	765.55	0.00
760.40	0.00	763.00	0.00	765.60	0.00
760.45	0.00	763.05	0.00	765.65	0.00
760.50	0.00	763.10	0.00	765.70	0.00
760.55	0.00	763.15	0.00	765.75	0.00
760.60	0.00	763.20	0.00	765.80	0.00
760.65	0.00	763.25	0.00	765.85	0.00
760.70	0.00	763.30	0.00	765.90	0.00
760.75	0.00	763.35	0.00	765.95	0.00
760.80	0.00	763.40	0.00	766.00	0.00
760.85	0.00	763.45	0.00		
760.90	0.00	763.50	0.00		
760.95	0.00	763.55	0.00		
761.00	0.00	763.60	0.00		
761.05	0.00	763.65	0.00		
761.10	0.00	763.70	0.00		
761.15	0.00	763.75	0.00		
761.20	0.00	763.80	0.00		
761.25	0.00	763.85	0.00		
761.30	0.00	763.90	0.00		
761.35	0.00	763.95	0.00		
761.40	0.00	764.00	0.00		
761.45	0.00	764.05	0.00		
761.50	0.00	764.10	0.00		
761.55	0.00	764.15	0.00		
761.60	0.00	764.20	0.00		
761.65	0.00	764.25	0.00		
761.70	0.00	764.30	0.00		
761.75	0.00	764.35	0.00		
761.80	0.00	764.40	0.00		
761.85	0.00	764.45	0.00		
761.90	0.00	764.50	0.00		
761.95	0.00	764.55	0.00		
762.00	0.00	764.60	0.00		
762.05	0.00	764.65	0.00		
762.10	0.00	764.70	0.00		
762.15	0.00	764.75	0.00		
762.20	0.00	764.80	0.00		
762.25	0.00	764.85	0.00		
762.30	0.00	764.90	0.00		
762.35	0.00	764.95	0.00		
762.40	0.00	765.00	0.00		
762.45	0.00	765.05	0.00		
762.50	0.00	765.10	0.00		
762.55	0.00	765.15	0.00		

Stage-Area-Storage for Pond 13-2P: POND C FOREBAY

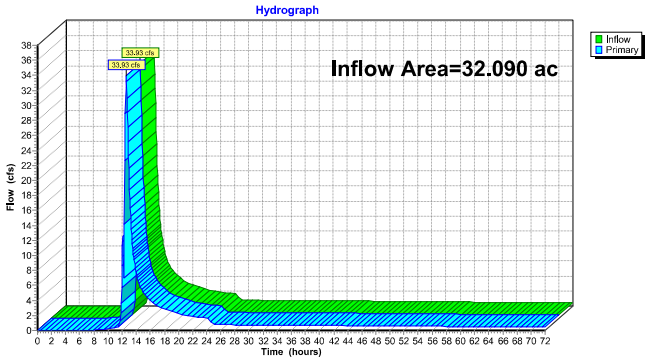
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	982	0	765.20	3,506	9,500
760.10	999	99	765.30	3,537	9,852
760.20	1,017	200	765.40	3,569	10,207
760.30	1,034	302	765.50	3,601	10,566
760.40	1,052	407	765.60	3,633	10,927
760.50	1,069	513	765.70	3,666	11,292
760.60	1,087	621	765.80	3,698	11,661
760.70	1,105	730	765.90	3,731	12,032
760.80	1,123	842	766.00	**3,763**	**12,407**
760.90	1,141	955			
761.00	1,159	1,070			
761.10	1,178	1,187			
761.20	1,197	1,305			
761.30	1,215	1,426			
761.40	1,234	1,548			
761.50	1,253	1,673			
761.60	1,272	1,799			
761.70	1,292	1,927			
761.80	1,311	2,057			
761.90	1,331	2,189			
762.00	1,350	2,324			
762.10	1,370	2,460			
762.20	1,390	2,598			
762.30	1,411	2,738			
762.40	1,431	2,880			
762.50	1,451	3,024			
762.60	1,472	3,170			
762.70	1,493	3,318			
762.80	1,514	3,468			
762.90	1,535	3,621			
763.00	1,556	3,776			
763.10	1,631	3,935			
763.20	1,706	4,102			
763.30	1,780	4,276			
763.40	1,855	4,458			
763.50	1,930	4,647			
763.60	2,013	4,844			
763.70	2,095	5,050			
763.80	2,178	5,263			
763.90	2,260	5,485			
764.00	2,343	5,715			
764.10	2,532	5,959			
764.20	2,721	6,222			
764.30	2,909	6,503			
764.40	3,098	6,803			
764.50	3,287	7,123			
764.60	3,318	7,453			
764.70	3,349	7,786			
764.80	3,380	8,123			
764.90	3,411	8,462			
765.00	3,442	8,805			
765.10	3,474	9,151			

Summary for Link 13-5L: POST DA-15 (POST ROUTING)

Inflow Area = 32.090 ac, 0.00% Impervious, Inflow Depth > 2.92" for 10-yr event
Inflow = 33.93 cfs @ 12.57 hrs, Volume= 7.808 af
Primary = 33.93 cfs @ 12.57 hrs, Volume= 7.808 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13-5L: POST DA-15 (POST ROUTING)



Summary for Subcatchment 13-1S: PRE DA-15

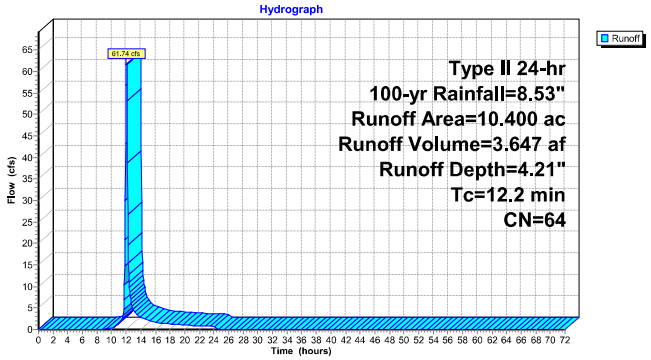
Runoff = 61.74 cfs @ 12.04 hrs, Volume= 3.647 af, Depth= 4.21"
Routed to nonexistent node 13-1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	10.400	64	
	10.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2					Direct Entry,

Subcatchment 13-1S: PRE DA-15



Summary for Subcatchment 13-2S: PRE DA-15-O1

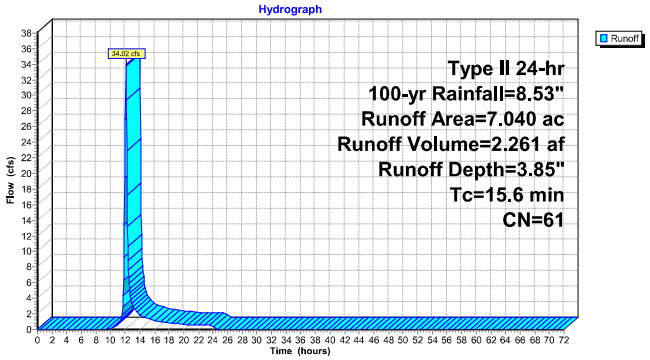
Runoff = 34.02 cfs @ 12.08 hrs, Volume= 2.261 af, Depth= 3.85"
Routed to nonexistent node 13-2L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	7.040	61	
	7.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6					Direct Entry,

Subcatchment 13-2S: PRE DA-15-O1



Summary for Subcatchment 13-5S: POST DA-15

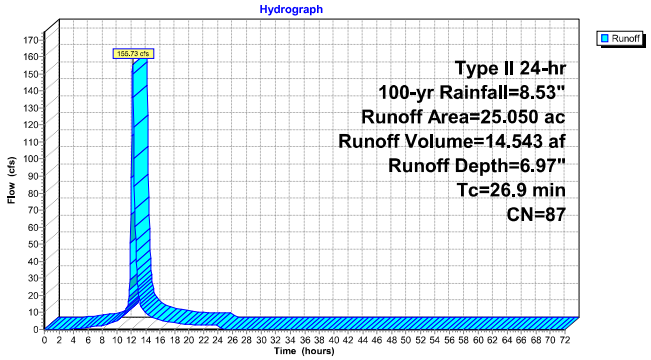
Runoff = 155.73 cfs @ 12.20 hrs, Volume= 14.543 af, Depth= 6.97"
Routed to Pond 13-1P : DA-15 WET POND C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

	Area (ac)	CN	Description
*	25.050	87	
	25.050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9					Direct Entry,

Subcatchment 13-5S: POST DA-15



Summary for Subcatchment 13-6S: POST DA-15-O1

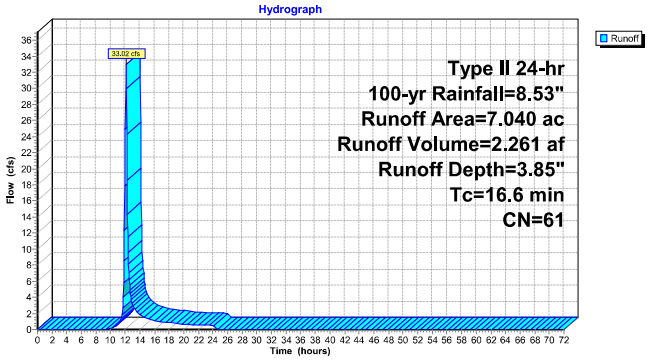
Runoff = 33.02 cfs @ 12.09 hrs, Volume= 2.261 af, Depth= 3.85"
Routed to Link 13-5L : POST DA-15 (POST ROUTING)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=8.53"

Area (ac)	CN	Description
* 7.040	61	
7.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6					**Direct Entry,**

Subcatchment 13-6S: POST DA-15-O1



Summary for Pond 13-1P: DA-15 WET POND C

Inflow Area = 25.050 ac, 0.00% Impervious, Inflow Depth = 6.97" for 100-yr event
Inflow = 155.73 cfs @ 12.20 hrs, Volume= 14.543 af
Outflow = 95.15 cfs @ 12.42 hrs, Volume= 13.645 af, Atten= 39%, Lag= 13.4 min
Primary = 60.75 cfs @ 12.42 hrs, Volume= 12.797 af
Routed to Link 13-5L : POST DA-15 (POST ROUTING)
Secondary = 34.39 cfs @ 12.42 hrs, Volume= 0.848 af
Routed to Link 13-5L : POST DA-15 (POST ROUTING)

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 764.00' Surf.Area= 28,984 sf Storage= 72,062 cf
Peak Elev= 769.98' @ 12.42 hrs Surf.Area= 49,405 sf Storage= 322,549 cf (250,488 cf above start)

Plug-Flow detention time= 531.4 min calculated for 11.983 af (82% of inflow)
Center-of-Mass det. time= 393.4 min (1,192.4 - 799.0)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	375,914 cf	**Custom Stage Data (Prismatic)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	13,950	0	0
760.50	15,139	7,272	7,272
761.00	15,826	7,741	15,014
761.50	16,524	8,088	23,101
762.00	17,233	8,439	31,540
762.50	17,952	8,796	40,337
763.00	18,682	9,159	49,495
763.50	21,300	9,996	59,491
764.00	28,984	12,571	72,062
764.50	35,958	16,236	88,297
765.00	37,118	18,269	106,566
765.50	38,717	18,959	125,525
766.00	39,855	19,643	145,168
766.50	41,007	20,216	165,383
767.00	42,173	20,795	186,178
767.50	43,352	21,381	207,560
768.00	44,545	21,974	229,534
768.50	45,752	22,574	252,108
769.00	46,972	23,181	275,289
769.50	48,206	23,795	299,084
770.00	49,453	24,415	323,498
770.50	50,720	25,043	348,542
771.00	58,770	27,373	375,914

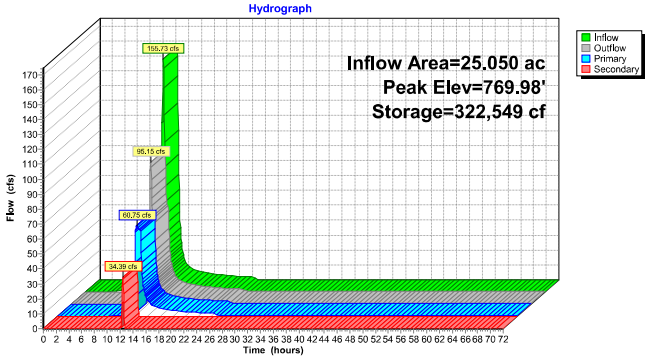
Device	Routing	Invert	Outlet Devices
#1	Primary	760.00'	**30.0" Round CULVERT** L= 279.0' Ke= 0.500 Inlet / Outlet Invert= 760.00' / 757.77' S= 0.0080 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	764.00'	**4.0" Vert. 1-YR CONTROL** C= 0.600

			Limited to weir flow at low heads
#3	Device 1	767.60'	**60.0" Horiz. TOP OF RISER** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	769.35'	**24.0' long + 3.0 '/' SideZ x 27.0' breadth EMERGENCY SPILLWAY**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=60.73 cfs @ 12.42 hrs HW=769.97' (Free Discharge)
└**1=CULVERT** (Barrel Controls 60.73 cfs @ 12.37 fps)
└**2=1-YR CONTROL** (Passes < 1.01 cfs potential flow)
└**3=TOP OF RISER** (Passes < 145.60 cfs potential flow)

Secondary OutFlow Max=33.68 cfs @ 12.42 hrs HW=769.97' (Free Discharge)
└**4=EMERGENCY SPILLWAY** (Weir Controls 33.68 cfs @ 2.09 fps)

Pond 13-1P: DA-15 WET POND C



Stage-Discharge for Pond 13-1P: DA-15 WET POND C

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
760.00	0.00	0.00	0.00
760.20	0.00	0.00	0.00
760.40	0.00	0.00	0.00
760.60	0.00	0.00	0.00
760.80	0.00	0.00	0.00
761.00	0.00	0.00	0.00
761.20	0.00	0.00	0.00
761.40	0.00	0.00	0.00
761.60	0.00	0.00	0.00
761.80	0.00	0.00	0.00
762.00	0.00	0.00	0.00
762.20	0.00	0.00	0.00
762.40	0.00	0.00	0.00
762.60	0.00	0.00	0.00
762.80	0.00	0.00	0.00
763.00	0.00	0.00	0.00
763.20	0.00	0.00	0.00
763.40	0.00	0.00	0.00
763.60	0.00	0.00	0.00
763.80	0.00	0.00	0.00
764.00	0.00	0.00	0.00
764.20	0.08	0.08	0.00
764.40	0.20	0.20	0.00
764.60	0.28	0.28	0.00
764.80	0.33	0.33	0.00
765.00	0.38	0.38	0.00
765.20	0.43	0.43	0.00
765.40	0.47	0.47	0.00
765.60	0.50	0.50	0.00
765.80	0.54	0.54	0.00
766.00	0.57	0.57	0.00
766.20	0.60	0.60	0.00
766.40	0.63	0.63	0.00
766.60	0.66	0.66	0.00
766.80	0.68	0.68	0.00
767.00	0.71	0.71	0.00
767.20	0.73	0.73	0.00
767.40	0.76	0.76	0.00
767.60	0.78	0.78	0.00
767.80	5.40	5.40	0.00
768.00	13.82	13.82	0.00
768.20	24.72	24.72	0.00
768.40	37.62	37.62	0.00
768.60	52.25	52.25	0.00
768.80	56.94	56.94	0.00
769.00	57.60	57.60	0.00
769.20	58.26	58.26	0.00
769.40	59.63	58.91	0.72
769.60	67.81	59.55	8.26
769.80	80.63	60.19	20.44
770.00	96.78	60.81	35.96
770.20	115.26	61.44	53.82
770.40	137.17	62.05	75.11
770.60	162.28	62.66	99.62
770.80	189.81	63.26	126.55
771.00	**219.72**	**63.86**	**155.85**

Stage-Area-Storage for Pond 13-1P: DA-15 WET POND C

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	13,950	0	770.40	50,467	343,533
760.20	14,426	2,909	770.60	52,330	354,016
760.40	14,901	5,818	770.80	55,550	364,965
760.60	15,276	8,821	771.00	**58,770**	**375,914**
760.80	15,551	11,917			
761.00	15,826	15,014			
761.20	16,105	18,249			
761.40	16,384	21,483			
761.60	16,666	24,789			
761.80	16,949	28,165			
762.00	17,233	31,540			
762.20	17,521	35,059			
762.40	17,808	38,577			
762.60	18,098	42,168			
762.80	18,390	45,832			
763.00	18,682	49,495			
763.20	19,729	53,493			
763.40	20,776	57,491			
763.60	22,837	62,005			
763.80	25,910	67,033			
764.00	28,984	72,062			
764.20	31,774	78,556			
764.40	34,563	85,050			
764.60	36,190	91,951			
764.80	36,654	99,258			
765.00	37,118	106,566			
765.20	37,758	114,150			
765.40	38,397	121,733			
765.60	38,945	129,453			
765.80	39,400	137,311			
766.00	39,855	145,168			
766.20	40,316	153,254			
766.40	40,777	161,340			
766.60	41,240	169,542			
766.80	41,707	177,860			
767.00	42,173	186,178			
767.20	42,645	194,731			
767.40	43,116	203,283			
767.60	43,591	211,954			
767.80	44,068	220,744			
768.00	44,545	229,534			
768.20	45,028	238,563			
768.40	45,511	247,593			
768.60	45,996	256,744			
768.80	46,484	266,017			
769.00	46,972	275,289			
769.20	47,466	284,807			
769.40	47,959	294,325			
769.60	48,455	303,966			
769.80	48,954	313,732			
770.00	49,453	323,498			
770.20	49,960	333,516			

Summary for Pond 13-2P: POND C FOREBAY

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	760.00'	12,407 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
760.00	982	0	0
760.50	1,069	513	513
761.00	1,159	557	1,070
761.50	1,253	603	1,673
762.00	1,350	651	2,324
762.50	1,451	700	3,024
763.00	1,556	752	3,776
763.50	1,930	872	4,647
764.00	2,343	1,068	5,715
764.50	3,287	1,408	7,123
765.00	3,442	1,682	8,805
765.50	3,601	1,761	10,566
766.00	3,763	1,841	12,407

Stage-Discharge for Pond 13-2P: POND C FOREBAY

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
760.00	**0.00**	762.60	0.00	765.20	0.00
760.05	0.00	762.65	0.00	765.25	0.00
760.10	0.00	762.70	0.00	765.30	0.00
760.15	0.00	762.75	0.00	765.35	0.00
760.20	0.00	762.80	0.00	765.40	0.00
760.25	0.00	762.85	0.00	765.45	0.00
760.30	0.00	762.90	0.00	765.50	0.00
760.35	0.00	762.95	0.00	765.55	0.00
760.40	0.00	763.00	0.00	765.60	0.00
760.45	0.00	763.05	0.00	765.65	0.00
760.50	0.00	763.10	0.00	765.70	0.00
760.55	0.00	763.15	0.00	765.75	0.00
760.60	0.00	763.20	0.00	765.80	0.00
760.65	0.00	763.25	0.00	765.85	0.00
760.70	0.00	763.30	0.00	765.90	0.00
760.75	0.00	763.35	0.00	765.95	0.00
760.80	0.00	763.40	0.00	766.00	0.00
760.85	0.00	763.45	0.00		
760.90	0.00	763.50	0.00		
760.95	0.00	763.55	0.00		
761.00	0.00	763.60	0.00		
761.05	0.00	763.65	0.00		
761.10	0.00	763.70	0.00		
761.15	0.00	763.75	0.00		
761.20	0.00	763.80	0.00		
761.25	0.00	763.85	0.00		
761.30	0.00	763.90	0.00		
761.35	0.00	763.95	0.00		
761.40	0.00	764.00	0.00		
761.45	0.00	764.05	0.00		
761.50	0.00	764.10	0.00		
761.55	0.00	764.15	0.00		
761.60	0.00	764.20	0.00		
761.65	0.00	764.25	0.00		
761.70	0.00	764.30	0.00		
761.75	0.00	764.35	0.00		
761.80	0.00	764.40	0.00		
761.85	0.00	764.45	0.00		
761.90	0.00	764.50	0.00		
761.95	0.00	764.55	0.00		
762.00	0.00	764.60	0.00		
762.05	0.00	764.65	0.00		
762.10	0.00	764.70	0.00		
762.15	0.00	764.75	0.00		
762.20	0.00	764.80	0.00		
762.25	0.00	764.85	0.00		
762.30	0.00	764.90	0.00		
762.35	0.00	764.95	0.00		
762.40	0.00	765.00	0.00		
762.45	0.00	765.05	0.00		
762.50	0.00	765.10	0.00		
762.55	0.00	765.15	0.00		

Stage-Area-Storage for Pond 13-2P: POND C FOREBAY

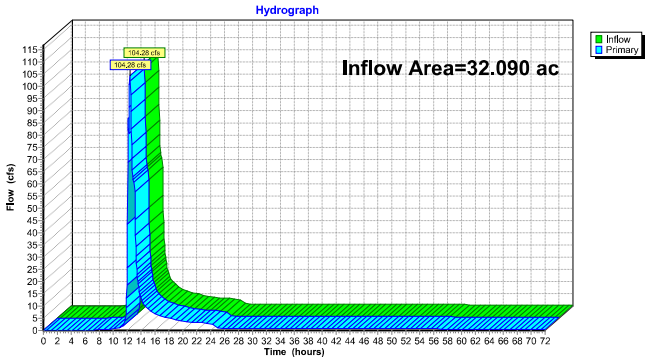
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
760.00	982	0	765.20	3,506	9,500
760.10	999	99	765.30	3,537	9,852
760.20	1,017	200	765.40	3,569	10,207
760.30	1,034	302	765.50	3,601	10,566
760.40	1,052	407	765.60	3,633	10,927
760.50	1,069	513	765.70	3,666	11,292
760.60	1,087	621	765.80	3,698	11,661
760.70	1,105	730	765.90	3,731	12,032
760.80	1,123	842	766.00	**3,763**	**12,407**
760.90	1,141	955			
761.00	1,159	1,070			
761.10	1,178	1,187			
761.20	1,197	1,305			
761.30	1,215	1,426			
761.40	1,234	1,548			
761.50	1,253	1,673			
761.60	1,272	1,799			
761.70	1,292	1,927			
761.80	1,311	2,057			
761.90	1,331	2,189			
762.00	1,350	2,324			
762.10	1,370	2,460			
762.20	1,390	2,598			
762.30	1,411	2,738			
762.40	1,431	2,880			
762.50	1,451	3,024			
762.60	1,472	3,170			
762.70	1,493	3,318			
762.80	1,514	3,468			
762.90	1,535	3,621			
763.00	1,556	3,776			
763.10	1,631	3,935			
763.20	1,706	4,102			
763.30	1,780	4,276			
763.40	1,855	4,458			
763.50	1,930	4,647			
763.60	2,013	4,844			
763.70	2,095	5,050			
763.80	2,178	5,263			
763.90	2,260	5,485			
764.00	2,343	5,715			
764.10	2,532	5,959			
764.20	2,721	6,222			
764.30	2,909	6,503			
764.40	3,098	6,803			
764.50	3,287	7,123			
764.60	3,318	7,453			
764.70	3,349	7,786			
764.80	3,380	8,123			
764.90	3,411	8,462			
765.00	3,442	8,805			
765.10	3,474	9,151			

Summary for Link 13-5L: POST DA-15 (POST ROUTING)

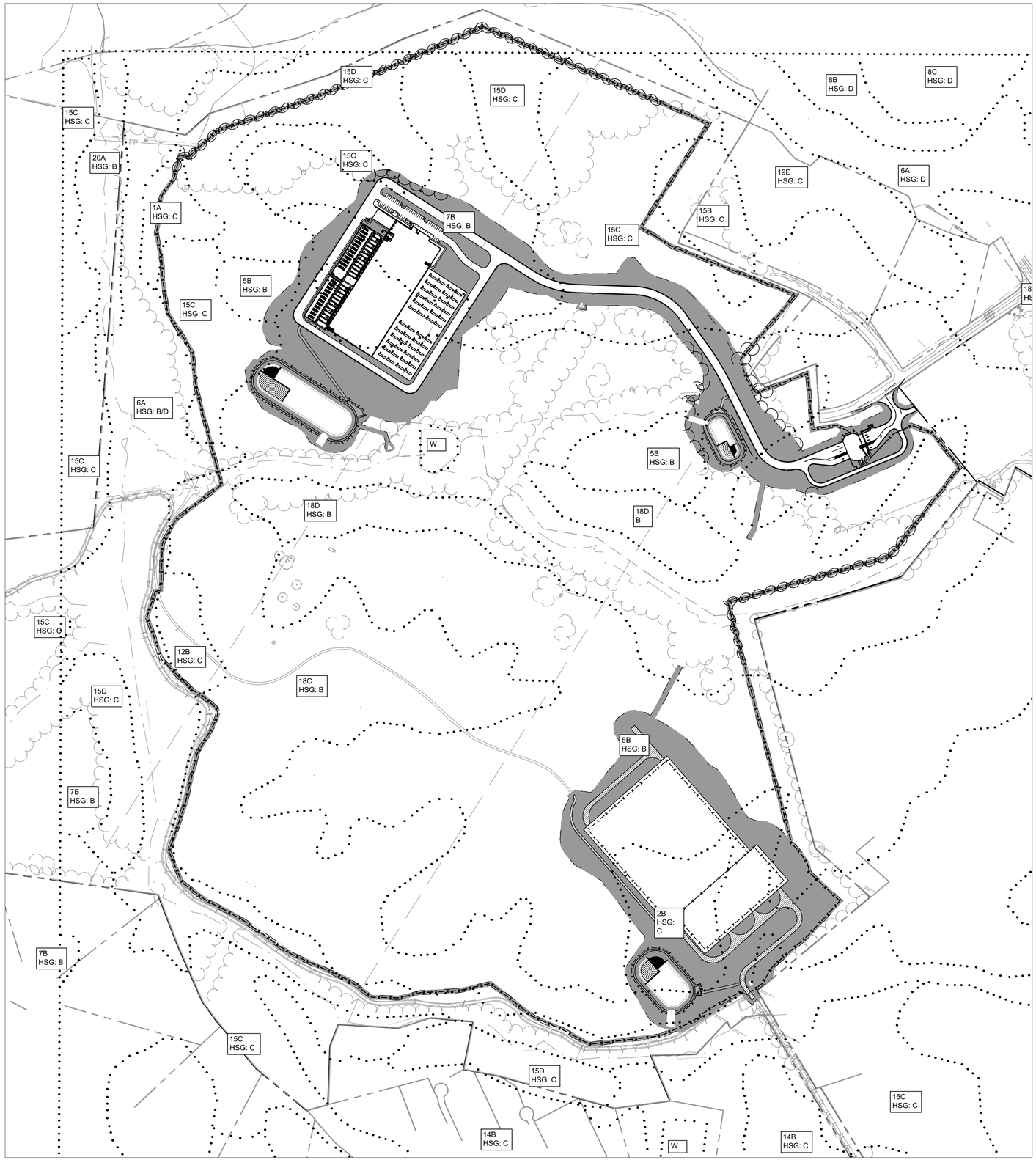
Inflow Area = 32.090 ac, 0.00% Impervious, Inflow Depth > 5.95" for 100-yr event
Inflow = 104.28 cfs @ 12.41 hrs, Volume= 15.906 af
Primary = 104.28 cfs @ 12.41 hrs, Volume= 15.906 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13-5L: POST DA-15 (POST ROUTING)



Appendix L – Stormwater Quality Calculations



STORMWATER QUALITY LEGEND

- IMPERVIOUS COVER
- MANAGED TURF
- LIMITS OF DISTURBANCE

STORMWATER QUALITY - SITE INFORMATION

Project Name: Project Hercules - Appomattox
Date: 12/8/2025
CLEAR ALL (Ctrl+Shift+N)
BMP Design Specifications List: 2024 Stds & Specs

data input cells | constant values | calculation cells | final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest (acres) -- undisturbed, protected forest or reforested land					0.00
Mixed Open (acres) -- undisturbed/infrequently maintained grass or shrub land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed		27.74	7.00	4.95	39.69
Impervious Cover (acres)				28.70	28.70
					68.39

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	35.03

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary	
Forest Cover (acres)	0.00
Weighted Rv (forest)	0.00
% Forest	0%
Mixed Open (acres)	0.00
Weighted Rv (mixed open)	0.00
% Mixed Open	0%
Managed Turf Cover (acres)	39.69
Weighted Rv (turf)	0.21
% Managed Turf	58%
Impervious Cover (acres)	28.70
Rv (impervious)	0.95
% Impervious	42%
Site Area (acres)	**68.39**
Site Rv	**0.52**

Treatment Volume and Nutrient Loads	
Treatment Volume (acre-ft)	2.9659
Treatment Volume (cubic feet)	129,194
TP Load (lb/yr)	52.81
TN Load (lb/yr)	654.00

Constants

Target Rainfall Event (inches)	1.00
Target TP Load (lb/acre/yr)	0.26

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest	0.02	0.03	0.04	0.05
Mixed Open	0.08	0.11	0.13	0.15
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

STORMWATER QUALITY COMPLIANCE

Site Results (Water Quality Compliance) VRRM 4.1, 2024

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MIXED OPEN AREA (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MIXED OPEN AREA TREATED (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	13.56	5.56	12.77	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	13.56	5.56	12.77	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	14.31	2.10	12.28	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	14.31	2.10	12.28	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft³) 129,194

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft³)	0	0	0	0	0	0
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	22.57	5.94	20.37	0.00	0.00	48.88
TP LOAD REDUCTION ACHIEVED (lb/yr)	16.93	4.46	15.28	0.00	0.00	36.66
TP LOAD REMAINING (lb/yr)	5.64	1.49	5.09	0.00	0.00	12.22
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	114.40	27.99	102.45	0.00	0.00	244.85

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	52.81
TP LOAD REDUCTION REQUIRED (lb/yr)	35.03
TP LOAD REDUCTION ACHIEVED (lb/yr)	36.66
TP LOAD REMAINING (lb/yr)	16.15
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr)	0.00

** TARGET TP REDUCTION EXCEEDED BY 1.63 LB/YEAR **

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	654.00
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	244.85
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	409.15

NORTH

GRAPHIC SCALE IN FEET
0 125 250 500

Jacobs

Kimley»Horn
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COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402057995
PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT 113706001
DATE 11/14/2025
SCALE AS SHOWN
DESIGNED BY STM
DRAWN BY STM
CHECKED BY JMM

STORMWATER QUALITY PLAN

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CG-205

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CG-205 STORMWATER QUALITY PLAN December 08, 2025 02:58:38pm
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DEQ Virginia Runoff Reduction Method New Development Compliance Spreadsheet - **Version 4.1**

Project Name: Project Hercules - Appomattox
Date: 12/8/2025

CLEAR ALL (Ctrl+Shift+R)

data input cells
constant values
calculation cells
final results

BMP Design Specifications List: 2024 Stds & Specs

Site Information

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest (acres) -- undisturbed, protected forest or reforested land					0.00
Mixed Open (acres) -- undisturbed/infrequently maintained grass or shrub land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed		27.74	7.00	4.95	39.69
Impervious Cover (acres)				28.70	28.70
					68.39

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	**35.03**

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary

Forest Cover (acres)	0.00
Weighted Rv (forest)	0.00
% Forest	0%
Mixed Open (acres)	0.00
Weighted Rv (mixed open)	0.00
% Mixed Open	0%
Managed Turf Cover (acres)	39.69
Weighted Rv (turf)	0.21
% Managed Turf	58%
Impervious Cover (acres)	28.70
Rv (impervious)	0.95
% Impervious	42%
Site Area (acres)	**68.39**
Site Rv	**0.52**

Treatment Volume and Nutrient Loads

Treatment Volume (acre-ft)	2.9659
Treatment Volume (cubic feet)	129,194
TP Load (lb/yr)	52.81
TN Load (lb/yr)	654.00

Drainage Area A

VRRM 4.1, 2024

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv	Composite Loading P
Forest (acres)					0.00	0.00	0.00
Mixed Open (acres)					0.00	0.00	0.00
Managed Turf (acres)			11.71	1.85	13.56	0.22	0.76
Impervious Cover (acres)				14.31	14.31	0.95	0.86
				Total	27.87		

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. A (lb/yr)	22.57
Post Development Treatment Volume in D.A. A (ft³)	60,379

Composite Loading N
0.00
0.00
8.08
12.33

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Mixed Open Credit Area (acres)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed	Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (lbs)	Remaining Nitrogen Load (lbs)
1. Vegetated Roof (RR)															**1. Vegetated Roof (RR)**				
1.a. Vegetated Roof #1 (P-FIL-02)	45					0	0	0	0		0.00	0.00	0.00		0		0.00	0.00	0.00
1.b. Vegetated Roof #2 (P-FIL-02)	60					0	0	0	0		0.00	0.00	0.00		0		0.00	0.00	0.00
2. Rooftop Disconnection (RR)															**2. Rooftop Disconnection (RR)**				
2.a. Simple Disconnection to A/B Soils (P-FIL-01)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.b. Simple Disconnection to C/D Soils (P-FIL-01)	25				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils) (P-FIL-08)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1, Micro-Infiltration #1 (P-FIL-04)	50				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.e. To Dry Well or French Drain #2, Micro-Infiltration #2 (P-FIL-04)	90				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.f. To Rain Garden #1, Micro-Bioretention #1 (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
2.g. To Rain Garden #2, Micro-Bioretention #2 (P-FIL-05)	80				0	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (P-BAS-04)	0				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.i. To Stormwater Planter, Urban Bioretention (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
3. Permeable Pavement (RR)															**3. Permeable Pavement (RR)**				
3.a. Permeable Pavement #1 (P-FIL-03)	45				0	0	0	0	25	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
3.b. Permeable Pavement #2 (P-FIL-03)	75					0	0	0	25		0.00	0.00	0.00		25		0.00	0.00	0.00
4. Grass Channel (RR)															**4. Grass Channel (RR)**				
4.a. Grass Channel A/B Soils (P-CNV-01)	20				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (P-CNV-01)	10				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.c. Grass Channel with Compost Amended Soils as per specs (P-FIL-08)	20				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
5. Dry Swale (RR)															**5. Dry Swale (RR)**				
5.a. Dry Swale #1 (P-CNV-02)	40				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (P-CNV-02)	60				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
6. Bioretention (RR)															**6. Bioretention (RR)**				
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
6.b. Bioretention #2 or Micro-Bioretention #2 (P-FIL-05)	80				0	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
7. Infiltration (RR)															**7. Infiltration (RR)**				
7.a. Infiltration #1 (P-FIL-04)	50				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
7.b. Infiltration #2 (P-FIL-04)	90				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
8. Extended Detention Pond (RR)															**8. Extended Detention Pond (RR)**				
8.a. ED #1 (P-BAS-03)	0				0	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
8.b. ED #2 (P-BAS-03)	15				0	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
9. Sheetflow to Filter/Open Space (RR)															**9. Sheetflow to Filter/Open Space (RR)**				
9.a. Sheetflow to Conservation Area, A/B Soils (P-FIL-07)	75				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.b. Sheetflow to Conservation Area, C/D Soils (P-FIL-07)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.c. Sheetflow to Vegetated Filter Strip, A Soils or Compost Amended B/C/D Soils (Spec P-FIL-07 & P-FIL-08)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
10. Regenerative Stormwater Conveyance															**10. Regenerative Stormwater Conveyance**				
10.a. Regenerative Stormwater Conveyance (P-CNV-04)	0				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
10.b. Regenerative Stormwater Conveyance (P-CNV-04)	0				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
11. Tree BMP															**11. Tree BMP**				
11.a. Trees over Pervious, A/B (P-FIL-09)	16				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
11.b. Trees over Pervious, C/D (P-FIL-09)	12				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
11.c. Trees over Impervious (P-FIL-09)	3.5				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac)	0.00	AREA CHECK: OK.
TOTAL MIXED OPEN TREATED (ac)	0.00	AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac)	0.00	AREA CHECK: OK.
TOTAL RUNOFF REDUCTION IN D.A. A (ft³)	0	
TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr)	22.57	
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00	
TOTAL PHOSPHORUS REMAINING AFTER APPLYING RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	22.57	

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

TOTAL RUNOFF REDUCTION IN D.A. A (ft³)	0
NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00

SEE WATER QUALITY COMPLIANCE TAB FOR SITE CALCULATIONS (Information Only)

12. Wet Swale (no RR)															**12. Wet Swale (Coastal Plain) (no RR)**				
12.a. Wet Swale #1 (P-CNV-03)	0				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
12.b. Wet Swale #2 (P-CNV-03)	0				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
13. Filtering Practices (no RR)															**13. Filtering Practices (no RR)**				
13.a.Filtering Practice #1 (P-FIL-06)	0				0	0	0	0	60	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
13.b. Filtering Practice #2 (P-FIL-06)	0				0	0	0	0	65	0.00	0.00	0.00	0.00		45	0.00	0.00	0.00	0.00
14. Constructed Wetland (no RR)															**14. Constructed Wetland (no RR)**				
14.a.Constructed Wetland #1 (P-BAS-01)	0				0	0	0	0	50	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
14.b. Constructed Wetland #2 (P-BAS-01)	0				0	0	0	0	75	0.00	0.00	0.00	0.00		55	0.00	0.00	0.00	0.00
15. Wet Ponds (no RR)															**15. Wet Ponds (no RR)**				
15.a. Wet Pond #1 (P-BAS-02)	0				0	0	0	0	50	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
15.b. Wet Pond #1 (Coastal Plain) (P-BAS-02)	0				0	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
15.c. Wet Pond #2 (P-BAS-02)	0		13.56	14.31	0	0	60,379	60,379	75	0.00	22.57	16.93	5.64		40	0.00	286.00	114.40	171.60
15.d. Wet Pond #2 (Coastal Plain) (P-BAS-02)	0				0	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
16. Manufactured Treatment Devices (no RR)															**16. Manufactured BMP (no RR)**				
16.a. Manufactured Treatment Device-Hydrodynamic	0				0	0	0	0	20	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
16.b. Manufactured Treatment Device-Filtering	0				0	0	0	0	20	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
16.c. Manufactured Treatment Device-Generic	0				0	0	0	0	20	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac)	14.31	AREA CHECK: OK.
TOTAL MIXED OPEN TREATED (ac)	0.00	AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac)	13.56	AREA CHECK: OK.
TOTAL PHOSPHORUS REMOVAL REQUIRED ON SITE (lb/yr)	35.03	
TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr)	22.57	
TOTAL PHOSPHORUS REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	16.93	
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00	
TOTAL PHOSPHORUS LOAD REDUCTION ACHIEVED IN D.A. A (lb/yr)	16.93	
TOTAL PHOSPHORUS REMAINING AFTER APPLYING BMP LOAD REDUCTIONS IN D.A. A (lb/yr)	5.64	

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00
NITROGEN REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	114.40
TOTAL NITROGEN REMOVED IN D.A. A (lb/yr)	114.40

Drainage Area B

VRRM 4.1, 2024

Drainage Area B Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv	Composite Loading P
Forest (acres)					0.00	0.00	0.00
Mixed Open (acres)					0.00	0.00	0.00
Managed Turf (acres)			5.56		5.56	0.22	0.75
Impervious Cover (acres)				2.10	2.10	0.95	0.86
				Total	7.66		

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. B (lb/yr) 5.94

Post Development Treatment Volume in D.A. B (ft³) 11,682

Composite Loading N
0.00
0.00
7.93
12.33

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Mixed Open Credit Area (acres)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed	Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (lbs)	Remaining Nitrogen Load (lbs)
1. Vegetated Roof (RR)																			
1.a. Vegetated Roof #1 (P-FIL-02)	45					0	0	0	0		0.00	0.00	0.00		0		0.00	0.00	0.00
1.b. Vegetated Roof #2 (P-FIL-02)	60					0	0	0	0		0.00	0.00	0.00		0		0.00	0.00	0.00
2. Rooftop Disconnection (RR)																			
2.a. Simple Disconnection to A/B Soils (P-FIL-01)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.b. Simple Disconnection to C/D Soils (P-FIL-01)	25				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils) (P-FIL-08)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1, Micro-Infiltration #1 (P-FIL-04)	50				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.e. To Dry Well or French Drain #2, Micro-Infiltration #2 (P-FIL-04)	90				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.f. To Rain Garden #1, Micro-Bioretention #1 (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
2.g. To Rain Garden #2, Micro-Bioretention #2 (P-FIL-05)	80				0	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (P-BAS-04)	0				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.i. To Stormwater Planter, Urban Bioretention (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
3. Permeable Pavement (RR)																			
3.a. Permeable Pavement #1 (P-FIL-03)	45				0	0	0	0	25	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
3.b. Permeable Pavement #2 (P-FIL-03)	75					0	0	0	25		0.00	0.00	0.00		25		0.00	0.00	0.00
4. Grass Channel (RR)																			
4.a. Grass Channel A/B Soils (P-CNV-01)	20				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (P-CNV-01)	10				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.c. Grass Channel with Compost Amended Soils as per specs (P-FIL-08)	20				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
5. Dry Swale (RR)																			
5.a. Dry Swale #1 (P-CNV-02)	40				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (P-CNV-02)	60				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
6. Bioretention (RR)																			
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
6.b. Bioretention #2 or Micro-Bioretention #2 (P-FIL-05)	80				0	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
7. Infiltration (RR)																			
7.a. Infiltration #1 (P-FIL-04)	50				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
7.b. Infiltration #2 (P-FIL-04)	90				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
8. Extended Detention Pond (RR)																			
8.a. ED #1 (P-BAS-03)	0				0	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
8.b. ED #2 (P-BAS-03)	15				0	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
9. Sheetflow to Filter/Open Space (RR)																			
9.a. Sheetflow to Conservation Area, A/B Soils (P-FIL-07)	75				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.b. Sheetflow to Conservation Area, C/D Soils (P-FIL-07)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.c. Sheetflow to Vegetated Filter Strip, A Soils or Compost Amended B/C/D Soils (Spec P-FIL-07 & P-FIL-08)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
10. Regenerative Stormwater Conveyance																			
10.a. Regenerative Stormwater Conveyance (P-CNV-04)	0				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
10.b. Regenerative Stormwater Conveyance (P-CNV-04)	0				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
11. Tree BMP																			
11.a. Trees over Pervious, A/B (P-FIL-09)	16				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
11.b. Trees over Pervious, C/D (P-FIL-09)	12				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
11.c. Trees over Impervious (P-FIL-09)	3.5				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac) 0.00 AREA CHECK: OK.
TOTAL MIXED OPEN TREATED (ac) 0.00 AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac) 0.00 AREA CHECK: OK.
TOTAL RUNOFF REDUCTION IN D.A. B (ft³) 0

TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. B (lb/yr) 5.94
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 0.00
TOTAL PHOSPHORUS REMAINING AFTER APPLYING RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 5.94

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

TOTAL RUNOFF REDUCTION IN D.A. B (ft³) 0
NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 0.00

SEE WATER QUALITY COMPLIANCE TAB FOR SITE CALCULATIONS (Information Only)

12. Wet Swale (no RR)																			
12.a. Wet Swale #1 (P-CNV-03)	0				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
12.b. Wet Swale #2 (P-CNV-03)	0				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
13. Filtering Practices (no RR)																			
13.a.Filtering Practice #1 (P-FIL-06)	0				0	0	0	0	60	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
13.b. Filtering Practice #2 (P-FIL-06)	0				0	0	0	0	65	0.00	0.00	0.00	0.00		45	0.00	0.00	0.00	0.00
14. Constructed Wetland (no RR)																			
14.a.Constructed Wetland #1 (P-BAS-01)	0				0	0	0	0	50	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
14.b. Constructed Wetland #2 (P-BAS-01)	0				0	0	0	0	75	0.00	0.00	0.00	0.00		55	0.00	0.00	0.00	0.00
15. Wet Ponds (no RR)																			
15.a. Wet Pond #1 (P-BAS-02)	0				0	0	0	0	50	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
15.b. Wet Pond #1 (Coastal Plain) (P-BAS-02)	0				0	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
15.c. Wet Pond #2 (P-BAS-02)	0		5.56	2.10	0	0	11,682	11,682	75	0.00	5.94	4.46	1.49		40	0.00	69.98	27.99	41.99
15.d. Wet Pond #2 (Coastal Plain) (P-BAS-02)	0				0	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
16. Manufactured Treatment Devices (no RR)																			
16.a. Manufactured Treatment Device-Hydrodynamic	0				0	0	0	0		0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
16.b. Manufactured Treatment Device-Filtering	0				0	0	0	0		0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
16.c. Manufactured Treatment Device-Generic	0				0	0	0	0		0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac) 2.10 AREA CHECK: OK.
TOTAL MIXED OPEN TREATED (ac) 0.00 AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac) 5.56 AREA CHECK: OK.

TOTAL PHOSPHORUS REMOVAL REQUIRED ON SITE (lb/yr) 35.03

TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. B (lb/yr) 5.94
TOTAL PHOSPHORUS REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 4.46
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 0.00
TOTAL PHOSPHORUS LOAD REDUCTION ACHIEVED IN D.A. B (lb/yr) 4.46
TOTAL PHOSPHORUS REMAINING AFTER APPLYING BMP LOAD REDUCTIONS IN D.A. B (lb/yr) 1.49

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 0.00
NITROGEN REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. B (lb/yr) 27.99
TOTAL NITROGEN REMOVED IN D.A. B (lb/yr) 27.99

Drainage Area C

VRRM 4.1, 2024

Drainage Area C Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv	Composite Loading P
Forest (acres)					0.00	0.00	0.00
Mixed Open (acres)					0.00	0.00	0.00
Managed Turf (acres)			9.60	3.17	12.77	0.23	0.77
Impervious Cover (acres)				12.28	12.28	0.95	0.86
				Total	25.05		

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. C (lb/yr): 20.37

Post Development Treatment Volume in D.A. C (ft³): 52,891

Composite Loading N
0.00
0.00
8.20
12.33

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Mixed Open Credit Area (acres)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed	Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (lbs)	Remaining Nitrogen Load (lbs)
1. Vegetated Roof (RR)															**1. Vegetated Roof (RR)**				
1.a. Vegetated Roof #1 (P-FIL-02)	45					0	0	0	0		0.00	0.00	0.00		0		0.00	0.00	0.00
1.b. Vegetated Roof #2 (P-FIL-02)	60					0	0	0	0		0.00	0.00	0.00		0		0.00	0.00	0.00
2. Rooftop Disconnection (RR)															**2. Rooftop Disconnection (RR)**				
2.a. Simple Disconnection to A/B Soils (P-FIL-01)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.b. Simple Disconnection to C/D Soils (P-FIL-01)	25				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils) (P-FIL-08)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1, Micro-Infiltration #1 (P-FIL-04)	50				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.e. To Dry Well or French Drain #2, Micro-Infiltration #2 (P-FIL-04)	90				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.f. To Rain Garden #1, Micro-Bioretention #1 (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
2.g. To Rain Garden #2, Micro-Bioretention #2 (P-FIL-05)	80				0	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (P-BAS-04)	0				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.i. To Stormwater Planter, Urban Bioretention (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
3. Permeable Pavement (RR)															**3. Permeable Pavement (RR)**				
3.a. Permeable Pavement #1 (P-FIL-03)	45				0	0	0	0	25	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
3.b. Permeable Pavement #2 (P-FIL-03)	75					0	0	0	25		0.00	0.00	0.00		25		0.00	0.00	0.00
4. Grass Channel (RR)															**4. Grass Channel (RR)**				
4.a. Grass Channel A/B Soils (P-CNV-01)	20				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (P-CNV-01)	10				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.c. Grass Channel with Compost Amended Soils as per specs (P-FIL-08)	20				0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
5. Dry Swale (RR)															**5. Dry Swale (RR)**				
5.a. Dry Swale #1 (P-CNV-02)	40				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (P-CNV-02)	60				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
6. Bioretention (RR)															**6. Bioretention (RR)**				
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (P-FIL-05)	40				0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
6.b. Bioretention #2 or Micro-Bioretention #2 (P-FIL-05)	80				0	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
7. Infiltration (RR)															**7. Infiltration (RR)**				
7.a. Infiltration #1 (P-FIL-04)	50				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
7.b. Infiltration #2 (P-FIL-04)	90				0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
8. Extended Detention Pond (RR)															**8. Extended Detention Pond (RR)**				
8.a. ED #1 (P-BAS-03)	0				0	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
8.b. ED #2 (P-BAS-03)	15				0	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
9. Sheetflow to Filter/Open Space (RR)															**9. Sheetflow to Filter/Open Space (RR)**				
9.a. Sheetflow to Conservation Area, A/B Soils (P-FIL-07)	75				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.b. Sheetflow to Conservation Area, C/D Soils (P-FIL-07)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.c. Sheetflow to Vegetated Filter Strip, A Soils or Compost Amended B/C/D Soils (Spec P-FIL-07 & P-FIL-08)	50				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
10. Regenerative Stormwater Conveyance															**10. Regenerative Stormwater Conveyance**				
10.a. Regenerative Stormwater Conveyance (P-CNV-04)	0				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
10.b. Regenerative Stormwater Conveyance (P-CNV-04)	0				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
11. Tree BMP															**11. Tree BMP**				
11.a. Trees over Pervious, A/B (P-FIL-09)	16				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
11.b. Trees over Pervious, C/D (P-FIL-09)	12				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
11.c. Trees over Impervious (P-FIL-09)	3.5				0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
12. Wet Swale (no RR)															**12. Wet Swale (Coastal Plain) (no RR)**				
12.a. Wet Swale #1 (P-CNV-03)	0				0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
12.b. Wet Swale #2 (P-CNV-03)	0				0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
13. Filtering Practices (no RR)															**13. Filtering Practices (no RR)**				
13.a.Filtering Practice #1 (P-FIL-06)	0				0	0	0	0	60	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
13.b. Filtering Practice #2 (P-FIL-06)	0				0	0	0	0	65	0.00	0.00	0.00	0.00		45	0.00	0.00	0.00	0.00
14. Constructed Wetland (no RR)															**14. Constructed Wetland (no RR)**				
14.a.Constructed Wetland #1 (P-BAS-01)	0				0	0	0	0	50	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
14.b. Constructed Wetland #2 (P-BAS-01)	0				0	0	0	0	75	0.00	0.00	0.00	0.00		55	0.00	0.00	0.00	0.00
15. Wet Ponds (no RR)															**15. Wet Ponds (no RR)**				
15.a. Wet Pond #1 (P-BAS-02)	0				0	0	0	0	50	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
15.b. Wet Pond #1 (Coastal Plain) (P-BAS-02)	0				0	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
15.c. Wet Pond #2 (P-BAS-02)	0		12.77	12.28	0	0	52,891	52,891	75	0.00	20.37	15.28	5.09		40	0.00	256.13	102.45	153.68
15.d. Wet Pond #2 (Coastal Plain) (P-BAS-02)	0				0	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
16. Manufactured Treatment Devices (no RR)															**16. Manufactured BMP (no RR)**				
16.a. Manufactured Treatment Device-Hydrodynamic	0				0	0	0	0		0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
16.b. Manufactured Treatment Device-Filtering	0				0	0	0	0		0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
16.c. Manufactured Treatment Device-Generic	0				0	0	0	0		0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac): 0.00 AREA CHECK: OK.
TOTAL MIXED OPEN TREATED (ac): 0.00 AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac): 0.00 AREA CHECK: OK.
TOTAL RUNOFF REDUCTION IN D.A. C (ft3): 0

TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. C (lb/yr): 20.37
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. C (lb/yr): 0.00
TOTAL PHOSPHORUS REMAINING AFTER APPLYING RUNOFF REDUCTION PRACTICES IN D.A. C (lb/yr): 20.37

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

TOTAL RUNOFF REDUCTION IN D.A. C (ft³): 0
NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. C (lb/yr): 0.00

SEE WATER QUALITY COMPLIANCE TAB FOR SITE CALCULATIONS (Information Only)

TOTAL IMPERVIOUS COVER TREATED (ac): 12.28 AREA CHECK: OK.
TOTAL MIXED OPEN TREATED (ac): 0.00 AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac): 12.77 AREA CHECK: OK.

TOTAL PHOSPHORUS REMOVAL REQUIRED ON SITE (lb/yr): 35.03

TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. C (lb/yr): 20.37
TOTAL PHOSPHORUS REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. C (lb/yr): 15.28
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. C (lb/yr): 0.00
TOTAL PHOSPHORUS LOAD REDUCTION ACHIEVED IN D.A. C (lb/yr): 15.28
TOTAL PHOSPHORUS REMAINING AFTER APPLYING BMP LOAD REDUCTIONS IN D.A. C (lb/yr): 5.09

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. C (lb/yr): 0.00
NITROGEN REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. C (lb/yr): 102.45
TOTAL NITROGEN REMOVED IN D.A. C (lb/yr): 102.45

Site Results (Water Quality Compliance) VRRM 4.1, 2024

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MIXED OPEN AREA (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MIXED OPEN AREA TREATED (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	13.56	5.56	12.77	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	13.56	5.56	12.77	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	14.31	2.10	12.28	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	14.31	2.10	12.28	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft^3)	129,194

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft^3)	0	0	0	0	0	0
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	22.57	5.94	20.37	0.00	0.00	48.88
TP LOAD REDUCTION ACHIEVED (lb/yr)	16.93	4.46	15.28	0.00	0.00	36.66
TP LOAD REMAINING (lb/yr)	5.64	1.49	5.09	0.00	0.00	12.22
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	114.40	27.99	102.45	0.00	0.00	244.85

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	52.81
TP LOAD REDUCTION REQUIRED (lb/yr)	35.03
TP LOAD REDUCTION ACHIEVED (lb/yr)	36.66
TP LOAD REMAINING (lb/yr):	16.15
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00

** TARGET TP REDUCTION EXCEEDED BY 1.63 LB/YEAR **

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	654.00
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	244.85
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	409.15

Appendix M – Culvert, Inlet, and Stormwater Conveyance Channel Drainage Area Map and Summary Table

Kimley»Horn

Project: AVAIO - APPOMATTOX
Project #: 113706001
Date: ~~9/16/2025~~
Locality: APPOMATTOX COUNTY

LAND USE TYPE	C
IMPERVIOUS	0.90
MANAGED TURF	0.30
FOREST/ OPEN SPACE	0.20

What cover are you? Pg 14

POST DEVELOPMENT INLET, CULVERT, AND DITCH DRAINAGE AREA SUMMARY

DRAINAGE AREA LABEL	INLET	TOTAL AREA (AC.)	IMPERVIOUS AREA (AC.)	MANAGED TURF AREA (AC.)	FOREST/ OPEN SPACE AREA (AC.)	C	TIME OF CONC. Tc (min)	INTENSITY (2-YR)	INTENSITY (10-YR)	INTENSITY (25-YR)	FLOWRATE (2-YR)	FLOWRATE (10-YR)	FLOWRATE (25-YR)
DA-A101	A101	0.365	0.177	0.189	0.000	0.59	5.0	4.9	6.49	7.32	1.06	1.400	1.578
DA-A104	A104	0.888	0.564	0.325	0.000	0.68	5.0	4.9	6.49	7.32	2.98	3.923	4.424
DA-A106	A106	0.172	0.103	0.069	0.000	0.66	5.0	4.9	6.49	7.32	0.56	0.736	0.830
DA-A107	A107	1.107	0.699	0.408	0.000	0.68	5.0	4.9	6.49	7.32	3.71	4.874	5.495
DA-A108	A108	0.250	0.168	0.082	0.000	0.70	5.0	4.9	6.49	7.32	0.87	1.141	1.286
DA-A109	A109	0.201	0.137	0.063	0.000	0.71	5.0	4.9	6.49	7.32	0.70	0.926	1.044
DA-A110	A110	0.296	0.140	0.156	0.000	0.58	5.0	4.9	6.49	7.32	0.85	1.119	1.262
DA-B101	B101	0.208	0.086	0.122	0.000	0.55	5.0	4.9	6.49	7.32	0.56	0.742	0.836
DA-B103	B103	0.108	0.045	0.063	0.000	0.55	5.0	4.9	6.49	7.32	0.29	0.386	0.435
DA-B104	B104	0.707	0.435	0.271	0.000	0.67	5.0	4.9	6.49	7.32	2.33	3.070	3.462
DA-B105	B105	0.741	0.654	0.087	0.000	0.83	5.0	4.9	6.49	7.32	3.03	3.988	4.497
DA-B106	B106	0.644	0.560	0.084	0.000	0.82	5.0	4.9	6.49	7.32	2.61	3.434	3.872
DA-B108	B108	0.676	0.581	0.094	0.000	0.82	5.0	4.9	6.49	7.32	2.72	3.577	4.033
DA-B109	B109	2.528	1.280	1.248	0.000	0.60	5.0	4.9	6.49	7.32	7.53	9.901	11.165
DA-B110	B110	1.127	0.362	0.765	0.000	0.49	5.0	4.9	6.49	7.32	2.74	3.601	4.060
DA-B110A	B110A	0.477	0.176	0.301	0.000	0.52	5.0	4.9	6.49	7.32	1.23	1.614	1.820
DA-B110B	B110B	0.211	0.133	0.078	0.000	0.68	5.0	4.9	6.49	7.32	0.71	0.927	1.046
DA-B111	B111	0.369	0.119	0.249	0.000	0.49	5.0	4.9	6.49	7.32	0.90	1.182	1.332
DA-B111A	B111A	0.392	0.124	0.269	0.000	0.49	5.0	4.9	6.49	7.32	0.95	1.244	1.403
DA-B112	B112	0.247	0.123	0.125	0.000	0.60	5.0	4.9	6.49	7.32	0.73	0.958	1.081
DA-B112A	B112A	0.225	0.112	0.113	0.000	0.60	5.0	4.9	6.49	7.32	0.66	0.874	0.986
DA-B113	B113	0.216	0.109	0.107	0.000	0.60	5.0	4.9	6.49	7.32	0.64	0.844	0.952
DA-B113A	B113A	0.239	0.115	0.124	0.000	0.59	5.0	4.9	6.49	7.32	0.69	0.913	1.029
DA-B114	B114	0.220	0.113	0.107	0.000	0.61	5.0	4.9	6.49	7.32	0.66	0.870	0.981
DA-B114A	B114A	0.236	0.119	0.117	0.000	0.60	5.0	4.9	6.49	7.32	0.70	0.921	1.039
DA-B115	B115	0.265	0.140	0.125	0.000	0.62	5.0	4.9	6.49	7.32	0.81	1.059	1.195
DA-B115A	B115A	0.268	0.140	0.128	0.000	0.61	5.0	4.9	6.49	7.32	0.81	1.066	1.202
DA-B116	B116	0.252	0.132	0.120	0.000	0.61	5.0	4.9	6.49	7.32	0.76	1.004	1.132
DA-B117	B117	0.254	0.127	0.127	0.000	0.60	5.0	4.9	6.49	7.32	0.75	0.987	1.113
DA-C102A	C102A	0.242	0.116	0.126	0.000	0.59	5.0	4.9	6.49	7.32	0.70	0.921	1.039
DA-C102B	C102B	0.215	0.117	0.098	0.000	0.63	5.0	4.9	6.49	7.32	0.66	0.872	0.984
DA-C103A	C103A	0.173	0.095	0.078	0.000	0.63	5.0	4.9	6.49	7.32	0.54	0.708	0.798
DA-C104	C104	0.244	0.244	0.000	0.000	0.90	5.0	4.9	6.49	7.32	1.08	1.424	1.606
DA-C104A	C104A	0.937	0.269	0.668	0.000	0.47	5.0	4.9	6.49	7.32	2.18	2.870	3.237
DA-C104B	C104B	0.190	0.112	0.078	0.000	0.65	5.0	4.9	6.49	7.32	0.61	0.808	0.911
DA-C105	C105	0.329	0.324	0.005	0.000	0.89	5.0	4.9	6.49	7.32	1.45	1.902	2.145
DA-C105A	C105A	0.347	0.112	0.235	0.000	0.49	5.0	4.9	6.49	7.32	0.84	1.111	1.252
DA-C106	C106	0.044	0.044	0.000	0.000	0.90	5.0	4.9	6.49	7.32	0.19	0.254	0.287
DA-C106A	C106A	0.397	0.154	0.243	0.000	0.53	5.0	4.9	6.49	7.32	1.04	1.371	1.545
DA-C107	C107	0.311	0.198	0.113	0.000	0.68	5.0	4.9	6.49	7.32	1.04	1.373	1.549
DA-CU100	CU100	7.790	1.869	5.920	0.000	0.44	21.6	2.7	3.73	4.25	9.49	12.887	14.708
DA-CU200	CU200	7.107	0.580	5.822	0.705	0.34	24.9	2.5	3.46	3.96	6.11	8.341	9.543
DA-R101	R101	3.308	3.307	0.000	0.000	0.90	5.0	4.9	6.49	7.32	14.68	19.311	21.775
DA-R102	R102	1.783	1.783	0.000	0.000	0.90	5.0	4.9	6.49	7.32	7.91	10.408	11.736
DA-S101	S101	8.291	6.139	2.152	0.000	0.74	5.0	4.9	6.49	7.32	30.44	40.033	45.141
DA-S104	S104	0.305	0.127	0.178	0.000	0.55	5.0	4.9	6.49	7.32	0.83	1.088	1.227
DA-S105	S105	0.114	0.010	0.104	0.000	0.35	5.0	4.9	6.49	7.32	0.20	0.261	0.294
DA-S106	S106	0.292	0.112	0.181	0.000	0.53	5.0	4.9	6.49	7.32	0.76	1.003	1.131
DA-S108	S108	1.845	1.414	0.430	0.000	0.76	5.0	4.9	6.49	7.32	6.91	9.094	10.255
DA-S109	S109	1.763	1.535	0.227	0.000	0.82	5.0	4.9	6.49	7.32	7.15	9.407	10.607
DA-S110	S110	3.569	1.760	1.809	0.000	0.60	5.0	4.9	6.49	7.32	10.49	13.796	15.557
DA-SCC-01	SCC-01	7.790	1.869	5.920	0.000	0.44	20.8	2.8	3.80	4.33	9.68	13.135	14.981
DA-SCC-02	SCC-02	7.107	0.580	5.822	0.705	0.34	23.8	2.6	3.54	4.05	6.27	8.538	9.760
DA-SCC-03	SCC-03	8.338	0.285	8.053	0.000	0.32	17.7	3.0	4.11	4.68	8.14	10.988	12.503
DA-SCC-04	SCC-04	6.694	4.849	1.844	0.000	0.73	5.0	4.9	6.49	7.32	24.26	31.902	35.973
DA-SCC-05	SCC-05	1.597	1.290	0.307	0.000	0.78	5.0	4.9	6.49	7.32	6.18	8.131	9.168

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CG-210 DRAINAGE AREA MAP November 05, 2025 04:42:08pm
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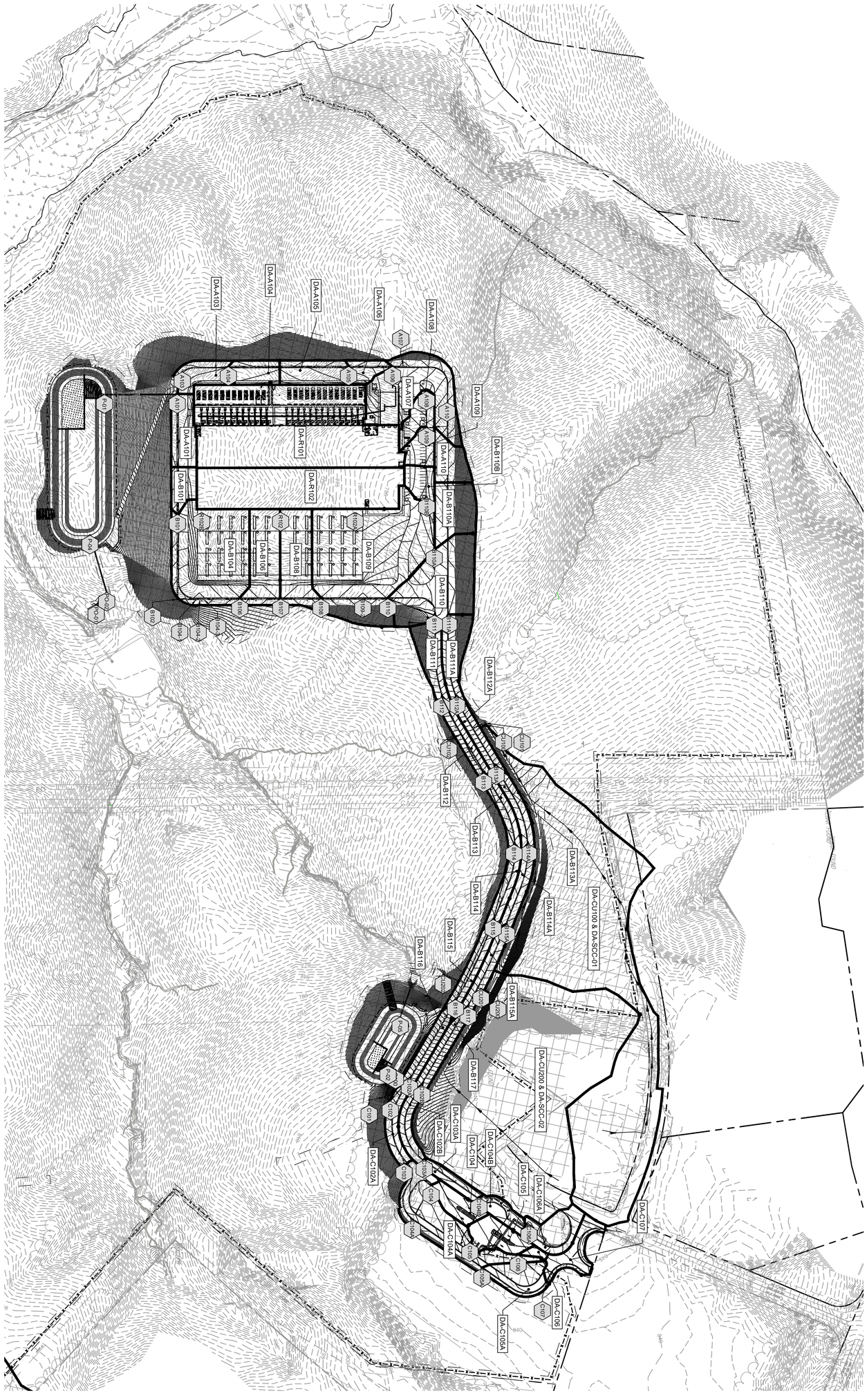

0 75 150 300
GRAPHIC SCALE IN FEET

NORTH

LAND COVER LEGEND
FORESTED COVER
IMPERVIOUS COVER
MANAGED TURF
DA-XX
DRAINAGE AREA CALL OUT
DRAINAGE AREA BOUNDARY

SHEET NUMBER
CG-210

PROJECT HERCULES
APPOMATTOX COUNTY VA

DRAINAGE AREA MAP

KHA PROJECT 113706001
DATE 11/14/2025
SCALE AS SHOWN
DESIGNED BY STM
DRAWN BY STM
CHECKED BY JMM

COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER
JOSH M MACDONALD
Lic. No. 0402097905
11/14/2025

Kimley»Horn
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6806 PARAGON PLACE, SUITE 310, RICHMOND, VA 23230
PHONE: 804-673-3882
WWW.KIMLEY-HORN.COM

Jacobs

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CG-211 DRAINAGE AREA MAP November 05, 2025 04:42:23pm
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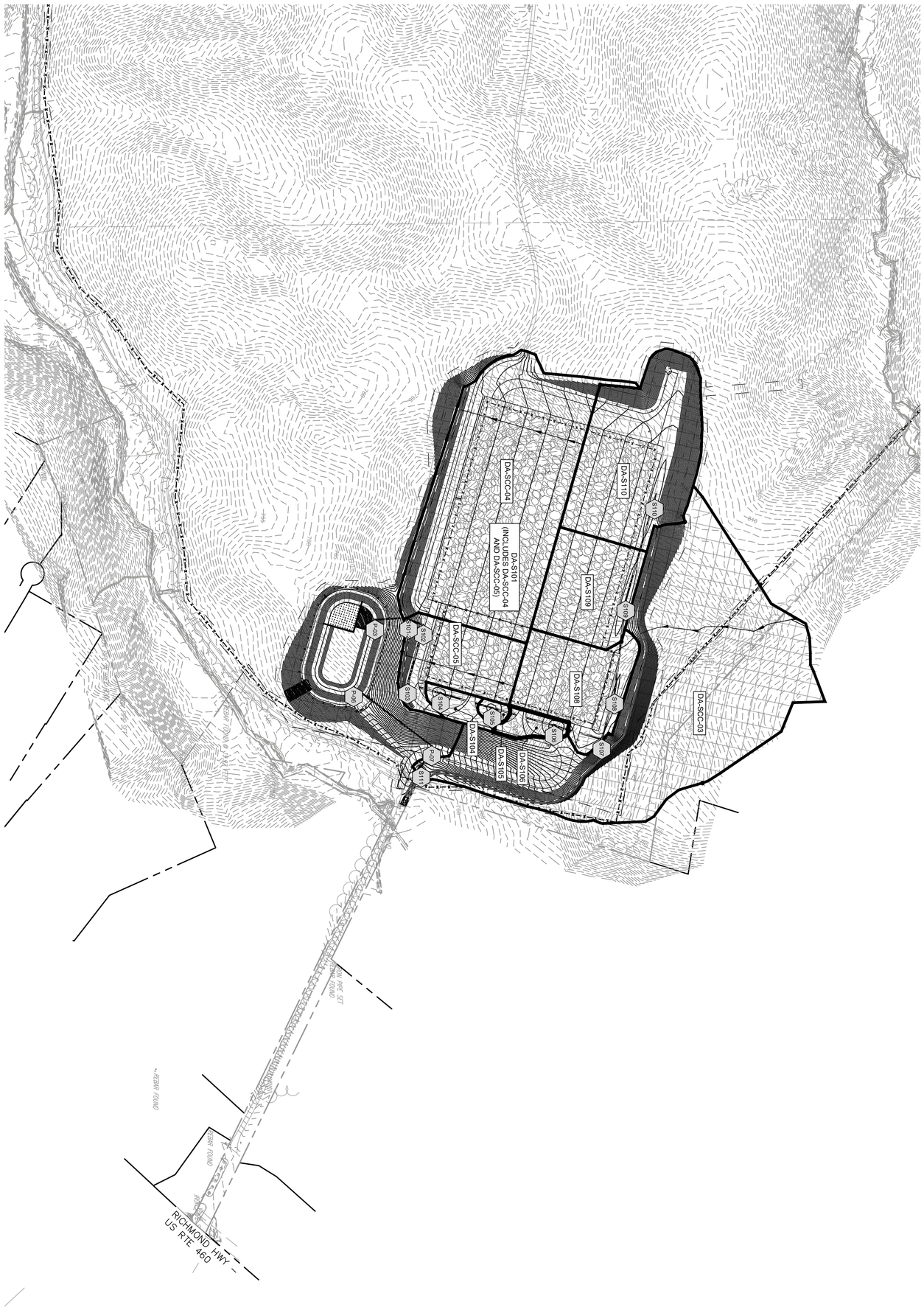

DA-SCC-04
DA-S101
(INCLUDES DA-SCC-04
AND DA-SCC-05)
DA-S110
DA-S109
DA-SCC-05
DA-S108
DA-SCC-03
DA-S104
DA-S105
DA-S106
S101
S102
S103
S104
S105
S106
S107
S108
S109
S110
S111
CP1
CP2
CP3
CP4
CP5
CP6
CP7
CP8
CP9
CP10
CP11
PIPE SYSTEM
PIPE SYSTEM
PIPE SYSTEM

Appendix N – Diversion & Stormwater Conveyance Channel Calculations

Kimley»Horn

Project: Hercules
Project #: 113706001
Date: 10/24/2025
Locality: Appomattox VA

BDE Values

	B	D	E
2-YR	49.67	11.16	0.83
10-YR	54.17	10.74	0.77
100-YR	49.67	8.92	0.67
Source:	Appomattox		

PHASE I E&S DITCH DESIGN SUMMARY TABLE

DITCH SECTION ID	DRAINAGE AREA	APPROX. LENGTH	C VALUE	TIME OF CONC.	I_2	I_{10}	I_{100}	Q_2	Q_{10}	Q_{100}	SLOPE	MANNING'S N	BOTTOM WIDTH	SIDE SLOPES		DESIGN DEPTH	2-YR DEPTH	2-YR VELOCITY	10-YR DEPTH	100-YR DEPTH	CHANNEL LINING	APPROX. CHK DAMS
														L	R							
	ACRES	FT		MIN	IN/HR	IN/HR	IN/HR	CFS	CFS	CFS	FT/FT		FT	FT/FT	FT/FT	FT	FT	FT/S	FT	FT		EA
DIV-1	7.27	722	0.50	20.87	2.80	3.79	5.11	10.16	13.78	18.58	0.01	0.02	5.0	3	3	1.0	0.40	4.09	0.48	0.56	EC-3	20
DIV-2	9.06	432	0.50	13.93	3.42	4.59	6.10	15.51	20.79	27.65	0.02	0.02	1.0	3	3	2.0	0.77	6.05	0.88	0.99	EC-3	6
DIV-3	15.60	818	0.50	14.00	3.42	4.58	6.09	26.64	35.72	47.52	0.02	0.02	1.0	3	3	2.0	1.04	6.23	1.18	1.32	EC-3	9

*Manning's N-value of 0.02 corresponds to "bare earth" land cover
*Rational Coefficient corresponds to bare earth land cover condition

Kimley»Horn

Project: Hercules
Project #: 113706001
Date: 6/25/2025
Locality: Appomattox VA

BDE Values

	B	D	E
2-YR	49.67	11.16	0.83
10-YR	54.17	10.74	0.77
100-YR	49.67	8.92	0.67
Source:	Appomattox		

PHASE II E&S AND POST DEVELOPMENT DITCH DESIGN SUMMARY TABLE

DITCH SECTION ID	DRAINAGE AREA	APPROX. LENGTH	C VALUE	TIME OF CONC.	I_2	I_{10}	I_{100}	Q_2	Q_{10}	Q_{100}	SLOPE	MANNING'S N	BOTTOM WIDTH	SIDE SLOPES		DESIGN DEPTH	2-YR DEPTH	2-YR VELOCITY	10-YR DEPTH	100-YR DEPTH	CHANNEL LINING	APPROX. CHK DAMS
														L	R							
	ACRES	FT		MIN	IN/HR	IN/HR	IN/HR	CFS	CFS	CFS	FT/FT		FT	FT/FT	FT/FT	FT	FT	FT/S	FT	FT		EA
SCC-01	7.79	800	0.44	20.80	2.80	3.80	5.12	9.60	13.02	17.54	0.01	0.02	5.0	3	3	1.0	0.39	4.01	0.46	0.54	EC-3	22
SCC-02	7.11	531	0.34	23.80	2.60	3.54	4.80	6.28	8.56	11.60	0.05	0.02	5.0	3	3	5.0	0.21	5.40	0.25	0.30	EC-3	6
SCC-03	8.34	1182	0.32	17.70	3.05	4.11	5.51	8.14	10.98	14.71	0.01	0.02	0.0	3	3	2.5	0.82	3.99	0.92	1.03	EC-2	6
SCC-04	6.69	680	0.73	5.00	4.93	6.49	8.51	24.09	31.68	41.55	0.01	0.02	0.0	3	3	2.5	1.24	5.23	1.37	1.52	EC-3	4
SCC-05	1.60	262	0.78	5.00	4.93	6.49	8.51	6.16	8.10	10.62	0.03	0.02	0.0	3	3	2.5	0.59	5.82	0.66	0.73	EC-3	5
SCC-06		94						9.98	42.39	73.32	0.05	0.02	0.0	3	3	2.5	0.68	7.36	1.15	1.42	EC-3	3

*Manning's N-value of 0.02 corresponds to "bare earth" land cover
*Rational Coefficient corresponds to most restrictive land cover type between Phase I E&S (bare earth) and the Ultimate Post Development condition
*SCC-06 was conservatively calculated by combining the flows from SCC-03 with the peak flows exiting Pond C

Appendix O – Culvert Calculations

Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Sep 18 2025

TEMP BYPASS CULVERT (TMP-01) - 2 YR

Invert Elev Dn (ft)	=	772.96
Pipe Length (ft)	=	35.00
Slope (%)	=	1.43
Invert Elev Up (ft)	=	773.46
Rise (in)	=	30.0
Shape	=	Circular
Span (in)	=	30.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Concrete
Culvert Entrance	=	Square edge w/headwall (C)
Coeff. K,M,c,Y,k	=	0.0098, 2, 0.0398, 0.67, 0.5

Embankment

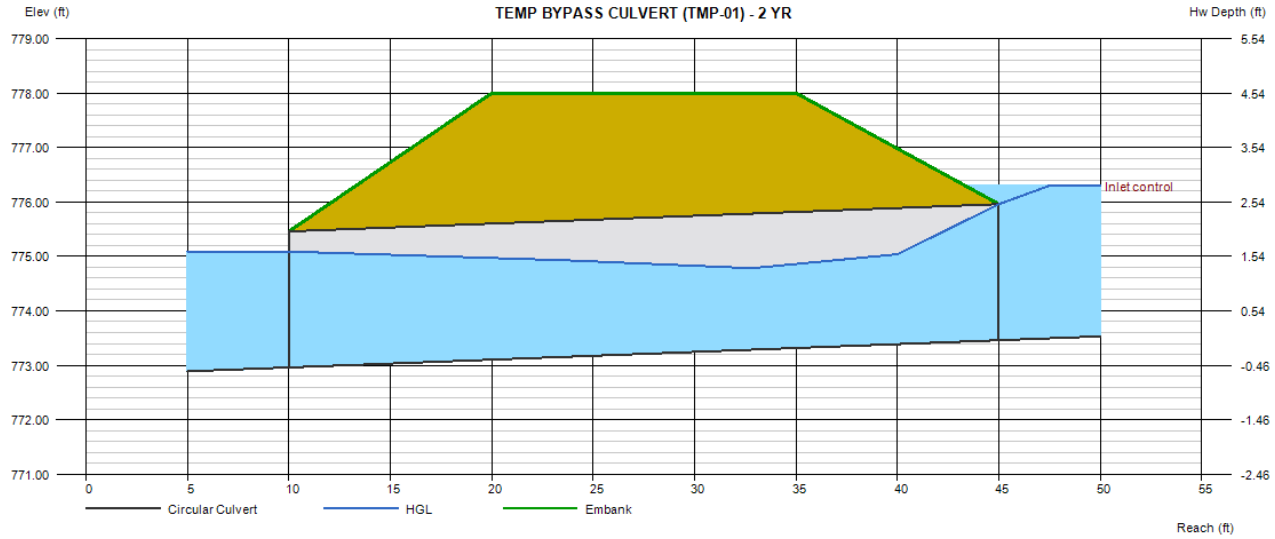
Top Elevation (ft)	=	778.00
Top Width (ft)	=	15.00
Crest Width (ft)	=	31.00

Calculations

Qmin (cfs)	=	26.64
Qmax (cfs)	=	26.64
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	26.64
Qpipe (cfs)	=	26.64
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	5.98
Veloc Up (ft/s)	=	7.22
HGL Dn (ft)	=	775.09
HGL Up (ft)	=	775.22
Hw Elev (ft)	=	776.30
Hw/D (ft)	=	1.14
Flow Regime	=	Inlet Control



Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Sep 18 2025

TEMP BYPASS CULVERT (TMP-01) - 10 YR

Invert Elev Dn (ft)	=	772.96
Pipe Length (ft)	=	35.00
Slope (%)	=	1.43
Invert Elev Up (ft)	=	773.46
Rise (in)	=	30.0
Shape	=	Circular
Span (in)	=	30.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Concrete
Culvert Entrance	=	Square edge w/headwall (C)
Coeff. K,M,c,Y,k	=	0.0098, 2, 0.0398, 0.67, 0.5

Embankment

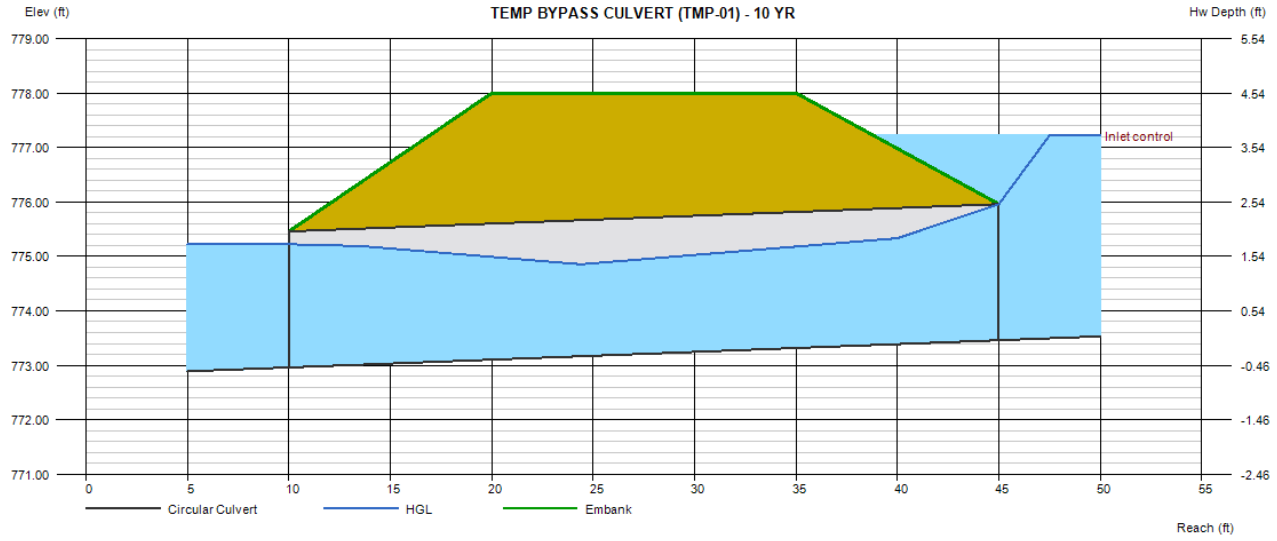
Top Elevation (ft)	=	778.00
Top Width (ft)	=	15.00
Crest Width (ft)	=	31.00

Calculations

Qmin (cfs)	=	35.72
Qmax (cfs)	=	35.72
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	35.72
Qpipe (cfs)	=	35.72
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	7.64
Veloc Up (ft/s)	=	8.38
HGL Dn (ft)	=	775.22
HGL Up (ft)	=	775.49
Hw Elev (ft)	=	777.22
Hw/D (ft)	=	1.51
Flow Regime	=	Inlet Control



Appendix P – VDOT Storm Drain Calculations

Kimley»Horn

Project: Hercules
Project #: 113706001
Date: 10/24/2025
Locality: Appomattox

Storm Drain Design Calculations
VDOT LD-229

10 -year storm
Manning n = 0.013

FROM POINT	TO POINT	DRAINAGE AREA	RUNOFF COEFFICIENT	CA		INLET TIME	RAINFALL	RUNOFF	INVERT ELEVATIONS		LENGTH	SLOPE	SIZE	PIPE CAPACITY	Q / Q_f	VELOCITY	FLOW TIME		REMARKS
				inlet	accum				upper end	lower end							incr	accum	
		acres	C			min	in/hr	cfs	ft	ft	ft	%	in	cfs	%	fps	min		
CU200	CU201	(N/A)	(N/A)	0.000	0.000	0.00	6.50	8.56	797.97	796.05	22	8.60%	24	66.38	13%	14.55	0.03	0.00	
CU201	CU202	(N/A)	(N/A)	0.000	0.000	0.00	6.50	8.56	795.95	785.31	123	8.70%	24	66.67	13%	14.59	0.14	0.03	
CU100	CU101	(N/A)	(N/A)	0.000	0.000	0.00	6.50	13.02	770.80	770.61	8	2.50%	24	36.00	36%	10.53	0.01	0.00	
CU101	CU102	(N/A)	(N/A)	0.000	0.000	0.00	6.50	13.02	770.51	765.79	120	3.90%	24	44.86	29%	12.37	0.16	0.01	
PO-2	P-05	(N/A)	(N/A)	0.000	0.000	0.00	6.50	8.70	782.10	792.94	109	-10.00%	24	71.37	12%	15.40	0.12	0.00	
P-06	P-07	(N/A)	(N/A)	0.000	0.000	0.00	6.50	31.41	760.00	757.77	279	0.80%	30	36.70	86%	8.40	0.55	0.00	
P-07	S111	(N/A)	(N/A)	0.000	0.000	0.00	6.50	31.41	757.67	755.84	68	2.70%	30	67.43	47%	13.49	0.08	0.55	
S110	S109	3.569	0.600	2.141	2.141	5.00	6.50	14.03	780.38	778.58	300	0.60%	36	51.66	27%	6.22	0.80	5.00	
S109	S108	1.763	0.820	1.446	3.587	5.00	6.29	22.75	778.47	776.87	267	0.60%	36	51.66	44%	7.07	0.63	5.80	
S108	S107	1.85	0.76	1.402	4.989	5.00	6.13	30.82	776.77	775.97	134	0.60%	36	51.66	60%	7.63	0.29	6.43	
S107	S106	(N/A)	(N/A)	0.000	4.989	0.00	6.05	30.43	775.87	775.03	141	0.60%	36	51.66	59%	7.61	0.31	6.73	
S106	S105	0.29	0.53	0.155	5.144	5.00	5.97	30.96	774.92	773.83	183	0.60%	36	51.66	60%	7.64	0.40	7.04	
S105	S104	0.11	0.35	0.040	5.184	5.00	5.87	30.66	773.73	772.81	153	0.60%	36	51.66	59%	7.62	0.34	7.43	
S104	S103	0.31	0.55	0.168	5.352	5.00	5.78	31.18	772.71	772.13	98	0.60%	36	51.66	60%	7.65	0.21	7.77	
S103	S102	(N/A)	(N/A)	0.000	5.352	0.00	5.73	30.88	772.03	770.99	173	0.60%	36	51.66	60%	7.63	0.38	7.98	
S102	S101-2	(N/A)	(N/A)	0.000	5.352	0.00	5.63	30.35	770.89	767.86	45	6.70%	36	172.97	18%	18.40	0.04	8.36	
S101-2	S101-1	(N/A)	(N/A)	0.000	5.352	0.00	5.62	30.29	767.86	767.83	5	0.50%	36	47.16	64%	4.29	0.02	8.40	
S101-1	P-03	8.29	0.74	6.135	11.487	5.00	5.61	64.97	767.76	764.21	94	3.80%	36	129.47	50%	18.33	0.09	8.42	
C102B	C102A	0.22	0.63	0.135	0.135	5.00	6.50	0.89	824.02	823.14	44	2.00%	15	9.13	10%	4.72	0.16	5.00	
C102A	C102	0.24	0.59	0.143	0.278	5.00	6.46	1.81	823.04	821.89	90	1.30%	15	7.28	25%	4.92	0.31	5.16	
C103A	C103	0.17	0.63	0.109	0.109	5.00	6.50	0.71	832.99	831.74	62	2.00%	15	9.13	8%	4.43	0.23	5.00	
C104A	C104	0.94	0.47	0.440	0.440	5.00	6.50	2.89	830.40	829.70	116	0.60%	18	8.14	36%	4.21	0.46	5.00	
C105A	C105	0.35	0.49	0.170	0.170	5.00	6.50	1.11	833.95	832.97	86	1.10%	15	6.92	16%	4.14	0.34	5.00	
C106A	C106	0.40	0.53	0.210	0.210	5.00	6.50	1.38	836.55	835.58	97	1.00%	15	6.46	21%	4.19	0.38	5.00	
C107	C106	0.31	0.68	0.211	0.211	5.00	6.50	1.39	835.20	833.96	119	1.00%	15	6.58	21%	4.25	0.47	5.00	
C106	C105	0.04	0.90	0.040	0.461	5.00	6.38	2.97	833.86	832.97	151	0.60%	15	4.96	60%	4.22	0.60	5.47	
C105	C104	0.33	0.89	0.293	0.924	5.00	6.22	5.80	832.72	830.36	210	1.10%	18	11.14	52%	6.37	0.55	6.06	
C104B	C104	0.19	0.65	0.124	0.123	5.00	6.50	0.81	833.99	832.50	150	1.00%	15	6.46	13%	3.59	0.69	5.00	
C104	C103	0.24	0.90	0.220	1.708	5.00	6.08	10.47	829.60	828.70	106	0.80%	24	20.84	50%	6.64	0.27	6.61	
C103	C102	(N/A)	(N/A)	0.000	1.817	0.00	6.01	11.01	828.60	822.98	194	2.90%	24	38.46	29%	10.57	0.31	6.88	
C102	C101	(N/A)	(N/A)	0.000	2.095	0.00	5.93	12.53	820.64	818.57	21	10.00%	30	129.38	10%	16.69	0.02	7.18	
C101	C100	(N/A)	(N/A)	0.000	2.095	0.00	5.93	12.52	807.46	805.36	88	2.40%	30	63.25	20%	10.03	0.15	7.20	
C100	P-02	(N/A)	(N/A)	0.000	2.095	0.00	5.89	12.44	805.26	805.00	26	1.00%	30	41.01	30%	2.53	0.17	7.35	
P-04	PO-02	(N/A)	(N/A)	0.000	0.000	0.00	6.50	22.68	707.00	706.09	180	0.50%	30	29.15	78%	6.56	0.46	0.00	
PO-02	PO-01	(N/A)	(N/A)	0.000	0.000	0.00	6.50	22.68	705.99	705.74	50	0.50%	30	29.15	78%	6.56	0.13	0.46	
A110	A109	0.30	0.58	0.172	0.172	5.00	6.50	1.12	753.23	752.60	23	2.80%	15	10.75	10%	5.68	0.07	5.00	
A109	A108	0.20	0.71	0.143	0.314	5.00	6.48	2.05	752.50	750.18	110	2.10%	15	9.38	22%	6.12	0.30	5.07	
A108	A107	0.25	0.70	0.175	0.489	5.00	6.41	3.16	750.08	748.99	104	1.10%	15	6.66	47%	5.36	0.32	5.37	
A107	A106	1.11	0.68	0.753	1.242	5.00	6.32	7.91	748.14	747.94	32	0.60%	24	17.52	45%	5.44	0.10	5.69	
A106	A105	3.48	(N/A)	0.000	4.333	5.00	6.30	27.50	747.44	746.64	133	0.60%	30	31.77	87%	7.28	0.31	5.79	
A105	A104	0.34	0.68	0.234	4.567	5.00	6.22	28.62	746.54	744.35	365	0.60%	30	31.77	90%	7.33	0.83	6.09	
A104	A103	0.25	0.68	0.167	4.734	5.00	6.00	28.63	744.25	743.41	141	0.60%	30	31.77	90%	7.33	0.32	6.92	
A103	A101	0.30	0.69	0.206	4.940	5.00	5.92	29.46	743.31	742.89	70	0.60%	30	31.77	93%	7.35	0.16	7.24	
B111A	B111	0.39	0.49	0.192	0.192	5.00	6.50	1.26	753.76	752.44	44	3.00%	15	11.19	11%	6.03	0.12	5.00	
B113A	B113	0.24	0.59	0.141	0.141	5.00	6.50	0.92	780.48	779.60	44	2.00%	15	9.13	10%	4.78	0.15	5.00	
B114A	B114	0.24	0.60	0.142	0.142	5.00	6.50	0.93	787.89	787.01	44	2.00%	15	9.11	10%	4.77	0.15	5.00	
B115A	B115	0.27	0.61	0.163	0.163	5.00	6.50	1.07	792.09	791.21	44	2.00%	15	9.13	12%	4.98	0.15	5.00	
B117	B116	0.25	0.60	0.152	0.152	5.00	6.50	1.00	802.88	801.56	44	3.00%	15	11.19	9%	5.64	0.13	5.00	
B116	B115	0.25	0.61	0.154	0.306	5.00	6.47	2.00	797.90	790.65	269	2.70%	15	10.61	19%	6.63	0.68	5.13	
B115	B114	0.27	0.62	0.164	0.634	5.00	6.29	4.02	790.55	785.46	236	2.20%	15	9.48	42%	7.40	0.53	5.81	
B114	B113	0.22	0.61	0.134	0.910	5.00	6.15	5.64	785.36	778.14	235	3.10%	15	11.33	50%	9.22	0.42	6.34	
B113	B113M	0.22	0.60	0.130	1.180	5.00	6.04	7.19	778.04	774.72	56	6.00%	15	15.80	46%	12.57	0.07	6.76	

Appendix Q – VDOT Hydraulic Grade Line Calculations

Kimley»Horn

Project: Hercules
Project #: 113706001
Date: ~~10/24/2025~~
Locality: Appomattox
10 -year storm

Hydraulic Grade Line Calculations
VDOT LD-347

Angle	0	15	20	25	30	40	50	60	70	80	90
K	0	0.19	0.25	0.30	0.35	0.43	0.50	0.56	0.61	0.66	0.70

INLET	0.8D + INV (OUT)	ACTUAL OUTLET WSE	DESIGN OUTLET WSE	D_o	Q_o	L_o	S_{fo}	H_f	JUNCTION LOSS														FINAL H	INLET WSE	F/L ELEV
									V_o	H_o	Q_i	V_i	Q_iV_i	$\frac{V_i^2}{2g}$	H_i	Angle	H_Δ	H_t	Surface Runoff Factor?	1.3 H_t	IS-1?	0.5 H_t			
(1)			(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		(13)	(14)	(15)	(16)		(17)		(18)	(19)	(20)	(21)
A100	713.41	713.98	713.98	30	69.26	111	0.0285	3.15	20.53	1.64	69.44	20.53	1425.6	6.54	2.29	0	0.00	3.93	NO	3.93	NO	3.93	7.08	721.06	736.57
A101	732.40	721.06	732.40	30	69.44	111	0.0287	3.17	20.53	1.64	44.26	8.21	363.37	1.05	0.37	90	0.73	2.74	NO	2.74	NO	2.74	5.90	738.30	757.72
A103	744.89	738.30	744.89	30	29.46	70	0.0052	0.36	7.35	0.21	28.63	7.33	209.86	0.83	0.29	70	0.51	1.01	NO	1.01	NO	1.01	1.37	746.26	757.19
A104	745.41	746.26	746.26	30	28.63	141	0.0049	0.69	7.33	0.21	28.62	7.33	209.78	0.83	0.29	0	0.00	0.50	NO	0.50	NO	0.50	1.19	747.45	758.05
A105	746.35	747.45	747.45	30	28.62	365	0.0049	1.78	7.33	0.21	27.50	7.28	200.20	0.82	0.29	0	0.00	0.50	NO	0.50	NO	0.50	2.27	749.72	756.75
A106	748.64	749.72	749.72	30	27.50	133	0.0045	0.60	7.28	0.21	7.91	5.44	43.03	0.46	0.16	0	0.00	0.37	YES	0.48	NO	0.48	1.08	750.80	754.15
A107	749.54	750.80	750.80	24	7.91	32	0.0012	0.04	5.44	0.11	3.16	5.36	16.94	0.45	0.16	50	0.22	0.49	YES	0.64	NO	0.64	0.68	751.48	753.20
A108	749.99	751.48	751.48	15	3.16	104	0.0024	0.25	5.36	0.11	2.05	6.12	12.55	0.58	0.20	40	0.25	0.57	YES	0.73	NO	0.73	0.98	752.46	755.35
A109	751.18	752.46	752.46	15	2.05	110	0.0010	0.11	6.12	0.15	1.12	5.68	6.36	0.50	0.18	90	0.35	0.67	YES	0.87	NO	0.87	0.98	753.45	757.79
A110	753.60	753.45	753.60	15	1.12	23	0.0003	0.01	5.68	0.13	0.00	0.00	0.00	0.00	0.00	0	0.00	0.13	YES	0.16	NO	0.16	0.17	753.77	758.09
B101	740.52	738.30	740.52	36	44.26	364	0.0044	1.60	8.21	0.26	44.32	8.22	364.31	1.05	0.37	0	0.00	0.63	NO	0.63	NO	0.63	2.23	742.75	756.93
B102	742.81	742.75	742.81	36	44.32	257	0.0044	1.13	8.22	0.26	44.54	8.22	366.12	1.05	0.37	90	0.73	1.36	NO	1.36	NO	1.36	2.50	745.31	752.40
B104-1	744.45	745.31	745.31	36	44.54	58	0.0045	0.26	8.22	0.26	44.58	6.31	281.30	0.62	0.22	0	0.00	0.48	NO	0.48	NO	0.48	0.74	746.04	751.84
B104-2	744.89	746.04	746.04	36	44.58	8	0.0045	0.04	6.31	0.15	44.64	6.32	282.12	0.62	0.22	0	0.00	0.37	NO	0.37	NO	0.37	0.41	746.45	751.71
B104-3	745.04	746.45	746.45	36	44.64	13	0.0045	0.06	6.32	0.16	37.71	5.33	200.99	0.44	0.15	0	0.00	0.31	YES	0.40	NO	0.40	0.46	746.91	751.94
B106	745.22	746.91	746.91	36	37.71	110	0.0032	0.35	5.33	0.11	35.55	5.03	178.82	0.39	0.14	0	0.00	0.25	NO	0.25	NO	0.25	0.60	747.51	753.98
B107	745.98	747.51	747.51	36	35.55	124	0.0028	0.35	5.03	0.10	27.18	5.54	150.58	0.48	0.17	90	0.33	0.60	NO	0.60	NO	0.60	0.95	748.46	756.67
R102	746.73	748.46	748.46	24	10.51	263	0.0022	0.57	7.31	0.21	0.00	0.00	0.00	0.00	0.00	0	0.00	0.21	YES	0.27	NO	0.27	0.84	749.30	760.35
B108	746.83	748.46	748.46	30	27.18	122	0.0044	0.53	5.54	0.12	24.52	4.99	122.35	0.39	0.14	0	0.00	0.25	YES	0.33	NO	0.33	0.87	749.33	753.99
B109-1	747.66	749.33	749.33	30	24.52	117	0.0036	0.42	4.99	0.10	24.56	5.00	122.80	0.39	0.14	0	0.00	0.23	NO	0.23	NO	0.23	0.65	749.98	751.90
B109-2	748.36	749.98	749.98	30	24.56	11	0.0036	0.04	5.00	0.10	24.59	5.01	123.20	0.39	0.14	0	0.00	0.23	NO	0.23	NO	0.23	0.27	750.25	751.73
B109-3	748.52	750.25	750.25	30	24.59	11	0.0036	0.04	5.01	0.10	16.15	3.29	53.13	0.17	0.06	0	0.00	0.16	YES	0.20	NO	0.20	0.24	750.49	751.90
B110	748.58	750.49	750.49	30	16.15	65	0.0016	0.10	3.29	0.04	10.79	9.87	106.50	1.51	0.53	20	0.38	0.95	YES	1.23	NO	1.23	1.34	751.83	753.10
B110A	749.22	751.83	751.83	15	2.51	207	0.0015	0.31	5.80	0.13	0.94	4.60	4.32	0.33	0.12	50	0.16	0.41	YES	0.53	NO	0.53	0.85	752.67	758.44
B110B	752.56	752.67	752.67	15	0.94	157	0.0002	0.03	4.60	0.08	0.00	0.00	0.00	0.00	0.00	0	0.00	0.08	YES	0.11	NO	0.11	0.14	752.81	758.74
B111	749.17	751.83	751.83	18	10.79	150	0.0106	1.58	9.87	0.38	8.75	10.38	90.83	1.67	0.59	70	1.02	1.98	YES	2.58	NO	2.58	4.16	755.98	756.81
B111A	753.44	755.98	755.98	15	1.26	44	0.0004	0.02	6.03	0.14	0.00	0.00	0.00	0.00	0.00	0	0.00	0.14	YES	0.18	NO	0.18	0.20	756.18	757.54
B112	752.84	755.98	755.98	15	8.75	250	0.0184	4.59	10.38	0.42	7.17	10.17	72.92	1.61	0.56	20	0.40	1.38	YES	1.80	NO	1.80	6.39	762.37	767.26
B112A	763.58	762.37	763.58	15	0.88	46	0.0002	0.01	4.71	0.09	0.00	0.00	0.00	0.00	0.00	0	0.00	0.09	YES	0.11	NO	0.11	0.12	763.70	767.43
B113M	761.00	762.37	762.37	15	7.17	208	0.0123	2.56	10.17	0.40	7.19	12.57	90.38	2.45	0.86	15	0.47	1.73	NO	1.73	NO	1.73	4.29	766.66	780.54
B113	775.72	766.66	775.72	15	7.19	56	0.0124	0.69	12.57	0.61	5.64	9.22	52.00	1.32	0.46	80	0.87	1.95	YES	2.53	NO	2.53	3.22	778.94	783.55
B113A	780.60	778.94	780.60	15	0.92	44	0.0002	0.01	4.78	0.09	0.00	0.00	0.00	0.00	0.00	0	0.00	0.09	YES	0.12	NO	0.12	0.12	780.72	783.50
B114	779.14	778.94	779.14	15	5.64	235	0.0076	1.79	9.22	0.33	4.02	7.40	29.75	0.85	0.30	40	0.37	0.99	YES	1.29	NO	1.29	3.08	782.22	792.22
B114A	788.01	782.22	788.01	15	0.93	44	0.0002	0.01	4.77	0.09	0.00	0.00	0.00	0.00	0.00	0	0.00	0.09	YES	0.11	NO	0.11	0.12	788.13	792.25
B115	786.46	782.22	786.46	15	4.02	236	0.0039	0.91	7.40	0.21	1.07	4.98	5.33	0.39	0.13	80	0.25	0.60	YES	0.78	NO	0.78	1.70	788.16	796.75
B115A	792.21	788.16	792.21	15	1.07	44	0.0003	0.01	4.98	0.10	0.00	0.00	0.00	0.00	0.00	0	0.00	0.10	YES	0.13	NO	0.13	0.14	792.35	796.75
B116	791.65	788.16	791.65	15	2.00	269	0.0010	0.26	6.63	0.17	1.00	5.64	5.64	0.49	0.17	80	0.33	0.67	YES	0.87	NO	0.87	1.13	792.78	806.65
B117	802.56	792.78	802.56	15	1.00	44	0.0002	0.01	5.64	0.12	0.00	0.00	0.00	0.00	0.00	0	0.00	0.12	YES	0.16	NO	0.16	0.17	802.73	806.65
C100	807.00	807.80	807.80	30	12.44	26	0.0009	0.02	2.53	0.02	12.52	10.03	125.58	1.56	0.55	80	1.03	1.60	NO	1.60	NO	1.60	1.63	809.43	811.99
C101	807.36	809.43	809.43	30	12.52	88	0.0009	0.08	10.03	0.39	12.53	16.69	209.13	4.33	1.51	70	2.64	4.54	NO	4.54	NO	4.54	4.62	814.05	825.20
C102	820.57	814.05	820.57	30	12.53	21	0.0009	0.02	16.69	1.08	11.01	10.57	116.38	1.73	0.61	40	0.75	2.43	NO	2.43	NO	2.43	2.45	823.02	832.44
C102A	822.89	823.02	823.02	15	1.81	90	0.0008	0.07	4.92	0.09	0.89	4.72	4.20	0.35	0.12	80	0.23	0.44	YES	0.58	NO	0.58	0.65	823.67	827.17
C102B	824.14	823.67	824.14	15	0.89	44	0.0002	0.01	4.72	0.09	0.00	0.00	0.00	0.00	0.00	0	0.00	0.09	YES	0.11	NO	0.11	0.12	824.26	827.17
C103	824.58	823.02	824.58	24	11.01	194	0.0024	0.46	10.57	0.43	10.47	6.64	69.52	0.68	0.24	40	0.29	0.97	NO	0.97	NO	0.97	1.43	826.01	836.93
C103A	832.74	826.01	832.74	15	0.71	62	0.0001	0.01	4.43	0.08	0.00	0.00	0.00	0.00	0.00	0	0.00	0.08	YES	0.10	NO	0.10	0.11	832.85	836.78
C104	830.30	826.01	830.30	24	10.47	106	0.0021	0.23	6.64	0.17	5.80	6.37	36.95	0.63	0.22	15	0.12	0.51	YES	0.66	NO	0.66	0.89	831.19	837.18
C104A	830.90	831.19	831.19	18	2.89	116	0.0008	0.09	4.21	0.07	0.00	0.00	0.00	0.00	0.00	0	0.00	0.07	YES	0.09	NO	0.09	0.18	831.37	834.17
C104B	833.50	831.19	833.50	15	0.81	150	0.0002	0.02	3.59	0.05	0.00	0.00	0.00	0.00	0.00	0	0.00	0.05	YES	0.07	NO	0.07	0.09	833.59	838.89
C105	831.56	831.19	831.56	18	5.80	210	0.0030	0.64	6.37	0.16	2.97	4.22	12.53	0.28	0.10	40	0.12	0.37	YES	0.49	NO	0.49	1.12	832.68	837.74
C105A	833.97	832.68	833.97	15	1.11	86	0.0003	0.03	4.14	0.07	0.00	0.00	0.00	0.00	0.00	0	0.00	0.07	YES	0.09	NO	0.09	0.11	834.08	838.10
C106	833.97	832.68	833.97	15	2.97	151	0.0021	0.32	4.22	0.07	1.39	4.25	5.91	0.28	0.10	30	0.10	0.27	NO	0.27	NO	0.27	0.58	834.55	840.29
C106A	836.58	834.55	836.58	15	1.38	97	0.0005	0.04	4.19	0.07	0.00	0.00	0.00	0.00	0.00	0	0.00	0.07	YES	0.09	NO	0.09	0.13	836.71	840.37
C107	834.96	834.55	834.96	15	1.39	119	0.0005	0.06	4.25	0.07	0.00	0.00	0.00	0.00	0.00	0	0.00	0.07	YES	0.09	NO	0.09	0.15	835.11	840.75
S101-1	766.61	768.04	768.04	36	64.97	94	0.0095	0.89	18.33	1.30	30.29	4.29	129.94	0.29	0.10	70	0.17	1.58	YES	2.05	NO	2.05	2.95	770.99	776.76
S101-2	770.23	770.99	770.99	36	30.29	5	0.0021	0.01	4.29	0.07	30.35	18.40	558.44	5.26	1.84	50	2.63	4.54	NO	4.54	NO	4.54	4.55	775.54	777.40
S102	770.26	775.54	775.54	36	30.35	45	0.0021	0.09	18.40	1.31	30.88	7.63	235.61	0.90	0.32	80	0.60	2.23	NO	2.23	NO	2.23	2.32	777.86	787.29
S103	773.39	777.86	777.86	36	30.88	173	0.0021	0.37	7.63	0.23	31.18	7.65	238.53	0.91	0.32	90	0.64	1.18	NO	1.18	NO	1.18	1.55	779.41	787.60
S104	774.53	779.41	779.41	36	31.18	98	0.0022	0.21	7.65	0.23	30.66	7.62	233.63	0.90	0.32	0	0.00	0.54	NO	0.54	NO	0.54	0.76	780.17	786.90
S105	775.21	780.17	780.17	36	30.66	153	0.0021	0.32	7.62	0.23	30.96	7.64	236.53	0.91	0.32	0	0.00	0.54	NO	0.54	NO	0.54	0.87	781.03	789.20
S106	776.23	781.03	781.03	36	30.96	183	0.0022	0.39	7.64	0.23	30.43	7.61	231.57	0.90	0.31	0	0.00	0.54	NO	0.54	NO	0.54	0.93	781.97	787.80
S107	777.43	781.97	781.97	36	30.43	141	0.0021	0.29	7.61	0.22	30.82	7.63	235.16	0.90	0.32	90	0.63	1.17	NO	1.17	NO	1.17	1.47	783.43	789.34
S108	778.37	783.43	783.43	36	30.82	134	0.0021	0.29	7.63	0.23	22.75	7.07	160.84	0.78	0.27	15	0.15	0.65	YES	0.84	NO	0.84	1.12	784.56	786.41
S109	779.27	784.56	784.56	36	22.75	267	0.0012	0.31	7.07	0.19	14.03	6.22	87.27	0.60	0.21	15	0.11	0.52	YES	0.67	NO	0.67	0.98	785.54	786.83
S110	780.98	785.54	785.54	36	14.03	300	0.0004	0.13	6.22	0.15	0.00	0.00	0.00	0.00	0.00	0	0.00	0.15	YES	0.20	NO	0.20	0.33	785.87	786.83
PO-02	707.74	707.74	707.74	30	22.68	50	0.0031	0.15	6.56	0.17	22.68	6.56	148.78	0.67	0.23	60	0.37	0.78	NO	0.78	NO	0.78	0.93	708.67	711.72
P-04	708.09	708.67	708.67	30	22.68	180	0.0031	0.55	6.56	0.17	0.00	0.00	0.00	0.00	0.00	0	0.00	0.17	YES	0.22	NO	0.22	0.77	709.44	713.00
P-07	757.84	757.84	757.84	30	31.41	68	0.0059	0.40	13.49	0.71	31.41	8.40	263.84	1.10	0.38	70	0.67	1.76	NO	1.76	NO	1.76	2.16	760.00	763.70
P-06	759.77	760.00	760.00	30	31.41	279	0.0059	1.64	8.40	0.27	0.00	0.00	0.00	0.00	0.00	0	0.00	0.27	YES	0.36	NO	0.36	1.99	761.99	767.10
CU101	767.39	765.79	767.39	24	13.02	120	0.0033	0.40	12.37	0.59	13.02	10.53	137.10	1.72	0.60	90	1.21	2.40	NO	2.40	NO	2.40	2.80	770.19	773.80
CU100		770.19	770.19	24	13.02	8	0.0033	0.02	10.53	0.43	0.00	0.00	0.00	0.00	0.00	0	0.00	0.43	YES	0.56	NO	0.56	0.58	770.77	770.80
CU201	786.91	785.31	786.91	24	8.56	123	0.0014	0.18	14.59	0.83	8.56	14.55	124.55	3.29	1.15	0	0.00	1.98	NO	1.98	NO	1.98	2.15	789.06	803.71
CU200		789.06	789.06	24	8.56	22	0.0014	0.03	14.55	0.82	0.00	0.00	0.00	0.00	0.00	0	0.00	0.82	YES	1.07	NO	1.07	1.10	790.16	797.97

Appendix R – Inlet Spread & Depth Calculations

SPREAD CALCULATIONS - CURB INLETS ON GRADE																				
Label	Efficiency (%)	Curb Opening Length (ft)	Local Depression (in)	Local Depression Width (in)	Discharge (cfs)	Slope (ft/ft)	Gutter Width (ft)	Intercepted Flow (cfs)	Bypass Flow (cfs)	Spread (ft)	Depth (in)	Flow Area (SF	Gutter Depression (in)	Total Depression (in)	Velocity (ft/s)	Equivalent Cross Slope (ft/ft)	Length Factor	Total Interception Length (ft)	Road Cross Slope (ft/ft)	Gutter Cross Slope (ft/ft)	Manning Coefficient
A101	100	8	2	24	1.42	0.006	2	1.42	0	7.4	3.2	0.6	1.6	3.6	2.29	0.128	1.151	7	0.018	0.083	0.013
A104	100	6	2	24	1.1	0.006	2	1.1	0	6	3	0.5	1.5	3.5	2.21	0.139	1.031	5.8	0.021	0.083	0.013
A105	100	8	2	24	1.54	0.01	2	1.54	0	5.1	3.1	0.5	1.3	3.3	3.19	0.145	1.015	7.9	0.029	0.083	0.013
A106	100	8	2	24	0.75	0.03	2	0.75	0	2	2	0.2	1.7	3.7	4.5	0.167	1.085	7.4	0.011	0.083	0.013
A110	100	8	2	24	1.42	0.006	2	1.42	0	7.5	3.2	0.6	1.6	3.6	2.27	0.128	1.155	6.9	0.018	0.083	0.013
B101	99.49	6	2	24	0.75	0.017	2	0.75	0	4.6	2.2	0.2	1.8	3.8	3.38	0.163	0.947	6.3	0.006	0.083	0.013
B106	99.34	14	2	24	3.47	0.018	2	3.45	0.02	8.6	3.5	0.8	1.5	3.5	4.22	0.117	0.939	14.9	0.019	0.083	0.013
B108	100	16	2	24	3.65	0.018	2	3.65	0	8.5	3.6	0.9	1.5	3.5	4.29	0.116	1.052	15.2	0.02	0.083	0.013
B110	100	16	2	24	3.63	0.018	2	3.63	0	8.4	3.5	0.8	1.5	3.5	4.32	0.117	1.051	15.2	0.02	0.083	0.013
B110A	100	10	2	24	1.63	0.015	2	1.63	0	6.9	2.8	0.5	1.7	3.7	3.38	0.137	1.069	9.4	0.014	0.083	0.013
B111	100	10	2	24	1.19	0.038	2	1.19	0	3.1	2.3	0.2	1.5	3.5	5.34	0.165	1.032	9.7	0.02	0.083	0.013
B111A	100	10	2	24	1.26	0.01	2	1.26	0	5.6	2.9	0.4	1.5	3.5	2.85	0.144	1.405	7.1	0.02	0.083	0.013
B112	100	10	2	24	0.98	0.051	2	0.98	0	2	2	0.2	1.5	3.5	5.87	0.167	1.033	9.7	0.02	0.083	0.013
B112A	100	10	2	24	0.89	0.057	2	0.89	0	1.9	1.9	0.1	1.5	3.5	5.97	0.167	1.041	9.6	0.02	0.083	0.013
B113	100	10	2	24	0.85	0.058	2	0.85	0	1.9	1.9	0.1	1.5	3.5	5.95	0.167	1.054	9.5	0.02	0.083	0.013
B113A	100	10	2	24	0.93	0.058	2	0.93	0	1.9	1.9	0.2	1.5	3.5	6.09	0.167	1.015	9.8	0.02	0.083	0.013
B114	98.06	6	2	24	0.88	0.017	2	0.86	0.02	3.4	2.3	0.2	1.5	3.5	3.61	0.163	0.888	6.8	0.02	0.083	0.013
B114A	97.26	6	2	24	0.93	0.017	2	0.9	0.03	3.6	2.4	0.3	1.5	3.5	3.62	0.162	0.864	6.9	0.02	0.083	0.013
B115	100	8	2	24	1.08	0.018	2	1.08	0	4	2.5	0.3	1.5	3.5	3.77	0.159	1.052	7.6	0.02	0.083	0.013
B115A	100	8	2	24	1.08	0.018	2	1.08	0	4	2.5	0.3	1.5	3.5	3.77	0.159	1.051	7.6	0.02	0.083	0.013
B116	99.58	10	2	24	1.01	0.065	2	1.01	0	1.9	1.9	0.2	1.5	3.5	6.45	0.167	0.952	10.5	0.02	0.083	0.013
B117	99.64	10	2	24	1	0.065	2	1	0	1.9	1.9	0.2	1.5	3.5	6.43	0.167	0.956	10.5	0.02	0.083	0.013
C102A	99.99	10	2	24	0.94	0.061	2	0.94	0	1.9	1.9	0.2	1.5	3.5	6.22	0.167	0.996	10	0.02	0.083	0.013
C102B	100	10	2	24	0.89	0.061	2	0.89	0	1.9	1.9	0.1	1.5	3.5	6.13	0.167	1.019	9.8	0.02	0.083	0.013
C103A	100	6	2	24	0.72	0.01	2	0.72	0	3.6	2.4	0.3	1.5	3.5	2.8	0.162	1.123	5.3	0.02	0.083	0.013
C104	100	6	2	24	1.44	0	2	1.44	0	13.2	4.7	1.9	1.5	3.5	0.77	0.086	1.521	3.9	0.02	0.083	0.013
C104B	100	6	2	24	0.81	0.01	2	0.81	0	4	2.5	0.3	1.5	3.5	2.84	0.159	1.055	5.7	0.02	0.083	0.013
C105A	100	8	2	24	1.12	0.013	2	1.12	0	4.6	2.6	0.3	1.5	3.5	3.28	0.154	1.115	7.2	0.021	0.083	0.013
C106	100	6	2	24	0.26	0.017	2	0.26	0	1.5	1.5	0.1	1.7	3.7	2.8	0.167	1.499	4	0.012	0.083	0.013
C107	99.93	8	2	24	1.39	0.015	2	1.39	0	4.3	2.8	0.4	1.3	3.3	3.69	0.154	0.982	8.1	0.029	0.083	0.013

SPREAD CALCULATIONS - DITCH INLETS IN SAG																
Label	Discharge (cfs)	Spread (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Grate Width (ft)	Grate Length (ft)	Clogging (%)	Depth (in)	Wetted Perimeter (ft)	Top Width (ft)	Open Grate Area (SF)	Active Grate Weir Length (ft)	Grate Type	Local Depression (in)	Local Depression Width (in)
S110	14.09	9.1	10	10	0	3	3.3	50	5.5	9.1	9.08	4	9.6	x 100 mm (P-	2	13
S109	9.51	6.2	10	10	0	3	3.3	50	3.7	6.3	6.22	4.5	9.6	0 mm (P-1-7/	2	13
S108	9.23	7.2	12	12	0	3	3.3	50	3.6	7.2	7.19	4.5	9.7	0 mm (P-1-7/	2	13
S106	2	1.1	11	15	0	3	3.3	50	0	0	0.04	4.5	9.7	0 mm (P-1-7/	2	13
S105	2	1.1	11	15	0	3	3.3	50	0	0	0.04	4.5	9.7	0 mm (P-1-7/	2	13
S104	2	1.1	11	14	0	3	3.3	50	0	0	0.04	4.5	9.7	0 mm (P-1-7/	2	13
S101	40.37	4.3	3	3	0	3	6.6	50	8.6	4.5	4.3	8.9	16.2	0 mm (P-1-7/	2	13

SPREAD CALCULATIONS - CURB INLETS IN SAG														
Label	Discharge (cfs)	Spread (ft)	Gutter Width (ft)	Gutter Cross Slope (ft/ft)	Road Cross Slope (ft/ft)	Curb Opening Length (ft)	Opening Height (ft)	Throat Incline Angle (degrees)	Depth (in)	Gutter Depression (in)	Total Depression (in)	Local Depression (in)	Local Depression Width (in)	Curb Throat Type
A103	1.35	5.4	2	0.083	0.029	6	0.5	90	3.2	1.3	3.3	2	24	Horizontal
A107	4.95	9.5	2	0.083	0.02	20	0.5	90	3.8	1.5	3.5	2	24	Horizontal
A108	1.15	7	2	0.083	0.02	6	0.5	90	3.2	1.5	3.5	2	24	Horizontal
A109	0.94	6.3	2	0.083	0.02	6	0.5	90	3	1.5	3.5	2	24	Horizontal
B104	7.56	9.6	2	0.083	0.02	30	0.5	90	3.8	1.5	3.5	2	24	Horizontal
B109	9.98	10.2	2	0.083	0.02	36	0.5	90	4	1.5	3.5	2	24	Horizontal
B110B	0.94	5.3	2	0.083	0.023	6	0.5	90	2.9	1.4	3.4	2	24	Horizontal
C104A	2.9	9.3	2	0.083	0.02	12	0.5	90	3.8	1.5	3.5	2	24	Horizontal
C105	1.93	9.7	2	0.083	0.018	8	0.5	90	3.7	1.6	3.6	2	24	Horizontal
C106A	1.38	9.9	2	0.083	0.016	6	0.5	90	3.5	1.6	3.6	2	24	Horizontal

Appendix S – Downstream Analysis

POST-DEVELOPMENT DOWNSTREAM ANALYSIS SUMMARY				
ONSITE DRAINAGE AREA	**RELEVANT CONVEYANCE CALCULATIONS**	**MS-19 SATISFACTION**	**CHANNEL PROTECTION SATISFACTION**	**FLOOD PROTECTION SATISFACTION**
DA-04	CS-DA-04	ENERGY BALANCE	ENERGY BALANCE, ONSITE POA 4 AT MAPPED STREAM	10-YR POST FLOW < 10-YR PRE FLOW, 10-YR STORM CONVEYED WITHIN EXISTING CHANNEL TO MAPPED FLOODPLAIN
DA-05	CS-DA-05	ENERGY BALANCE	ENERGY BALANCE, ONSITE POA 5 AT MAPPED STREAM	10-YR POST FLOW < 10-YR PRE FLOW, LOCALIZED FLOODING WITHIN EXISTING CHANNEL
DA-06	CS-DA-06	ENERGY BALANCE	ENERGY BALANCE, ONSITE POA 6 AT MAPPED STREAM	10-YR POST FLOW < 10-YR PRE FLOW, LOCALIZED FLOODING WITHIN EXISTING CHANNEL
DA-15	CS-DA-15	ENERGY BALANCE	ENERGY BALANCE, ONSITE POA 15 AT MAPPED STREAM	10-YR POST FLOW < 10-YR PRE FLOW, LOCALIZED FLOODING WITHIN EXISTING CHANNEL

SEDIMENT BASIN DOWNSTREAM ANALYSIS SUMMARY					
DRAINAGE AREA ID	COMPLIANCE METHOD	2-YEAR PEAK FLOW ANALYSIS TEMPORARY SEDIMENT BASIN			CALCULATION PROVIDED
	9VAC25-875-560.19.c.3	2-YR PRE PEAK DISCHARGE (CFS)	2-YR ESC PEAK DISCHARGE FROM BASIN (CFS)	ESC<PRE?	
DA-04 ; SEDIMENT BASIN A	X	7.88	1.31	YES	N/A - ESC<PRE
DA-06 ; SEDIMENT BASIN B	X	1.12	0.37	YES	N/A - ESC<PRE
DA-15 ; SEDIMENT BASIN C	X	8.37	1.84	YES	N/A - ESC<PRE

*The 2-year flow provided from all basins is from the more conservative Phase 2 ESC condition

Kimley»Horn

Project: Hercules
Project #: 113706001
Date: 10/24/2025
Locality: Appomattox VA

BDE Values

	B	D	E
2-YR	49.67	11.16	0.83
10-YR	54.17	10.74	0.77
100-YR	49.67	8.92	0.67
Source:	Appomattox		

PRE DEVELOPMENT DOWNSTREAM DITCH CALCULATIONS

DITCH SECTION ID	DRAINAGE AREA	APPROX. LENGTH	C VALUE	TIME OF CONC.	I_2	I_{10}	Q_2	Q_{10}	SLOPE	MANNING'S N	BOTTOM WIDTH	SIDE SLOPES		DESIGN DEPTH	2-YR DEPTH	2-YR VELOCITY	10-YR DEPTH	Added On-Site Q_2	Added On-Site Q_{10}
												L	R						
	ACRES	FT		MIN	IN/HR	IN/HR	CFS	CFS	FT/FT		FT	FT/FT	FT/FT	FT	FT	FT/S	FT	CFS	CFS
CS-DA-04	103.64	4958	0.27	31.55	2.20	3.03	61.45	84.60	0.05	0.1	0.0	0.15	0.19	14.8	10.95	3.02	12.34		
CS-DA-05	15.23	2319	0.34	17.40	3.07	4.15	15.70	21.18	0.06	0.1	0.0	0.07	0.05	2.7	11.86	1.86	13.27		
CS-DA-06	21.36	1732	0.26	7.62	4.35	5.76	24.07	31.85	0.06	0.1	0.0	0.17	0.11	7.0	8.19	2.56	9.10		
CS-DA-15	273.24	4776	0.34	29.84	2.28	3.13	212.61	292.06	0.01	0.1	18.0	0.12	0.16	3.0	3.89	2.95	4.80		

*Note: n factor assumptions as follows:

With short grass, few weeds	0.03
Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.10

Kimley»Horn

Project: Hercules
Project #: 113706001
Date: 10/24/2025
Locality: Appomattox VA

BDE Values

	B	D	E
2-YR	49.67	11.16	0.83
10-YR	54.17	10.74	0.77
100-YR	49.67	8.92	0.67
Source:	Appomattox		

POST DEVELOPMENT DOWNSTREAM DITCH CALCULATIONS

DITCH SECTION ID	DRAINAGE AREA	APPROX. LENGTH	C VALUE	TIME OF CONC.	I_2	I_{10}	Q_2	Q_{10}	SLOPE	MANNING'S N	BOTTOM WIDTH	SIDE SLOPES		DESIGN DEPTH	2-YR DEPTH	2-YR VELOCITY	10-YR DEPTH	Added On-Site Q_2	Added On-Site Q_{10}
												L	R						
	ACRES	FT		MIN	IN/HR	IN/HR	CFS	CFS	FT/FT		FT	FT/FT	FT/FT	FT	FT	FT/S	FT	CFS	CFS
CS-DA-04	88.12	4821	0.27	32.13	2.18	3.00	52.45	92.86	0.05	0.1	0.0	0.15	0.19	14.8	10.32	2.90	12.78	1.50	22.68
CS-DA-05	13.18	2319	0.34	30.43	2.25	3.09	10.20	14.02	0.06	0.1	0.0	0.07	0.05	2.7	10.06	1.68	11.33		
CS-DA-06	20.04	1883	0.29	20.43	2.83	3.83	16.84	31.03	0.06	0.1	0.0	0.17	0.11	7.0	7.16	2.34	9.01	0.37	8.70
CS-DA-15	259.36	1713	0.34	29.84	2.28	3.13	204.64	309.99	0.01	0.1	18.0	0.12	0.16	3.0	3.79	2.92	4.99	1.84	31.41

*Note: n factor assumptions as follows:	
With short grass, few weeds	0.03
Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.10

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CG-206 PRE DEVELOPMENT DOWNSTREAM ANALYSIS November 06, 2025 01:45:40pm
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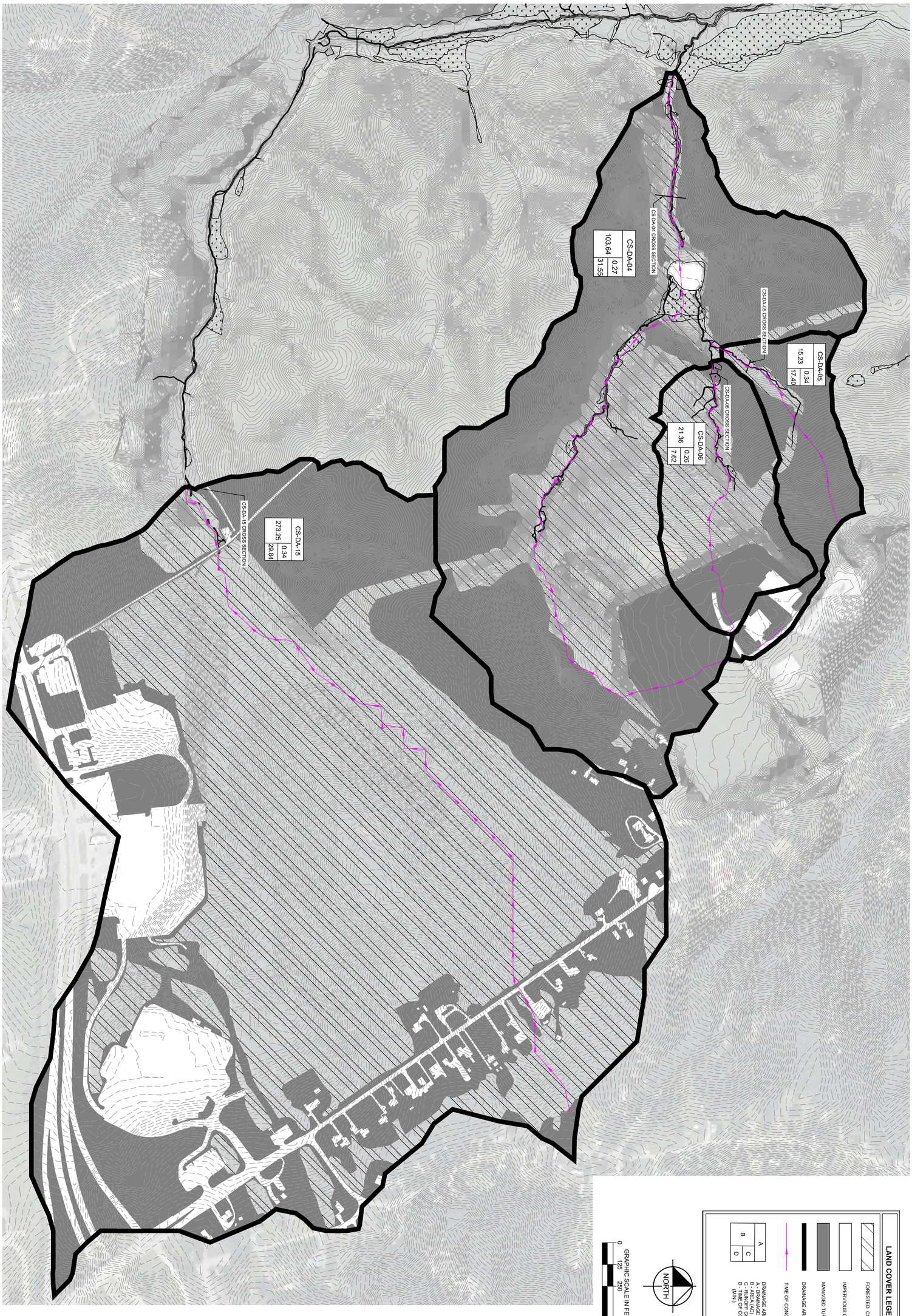

SHEET NUMBER CG-206	PROJECT HERCULES APPOMATTOX COUNTY VA	PRE DEVELOPMENT DOWNSTREAM ANALYSIS	KHA PROJECT 113706001 DATE 11/14/2025 SCALE AS SHOWN DESIGNED BY STM DRAWN BY STM CHECKED BY JMM	PROFESSIONAL ENGINEER COMMONWEALTH OF VIRGINIA JOSH M MACDONALD Lic. No. 0402027905 11/14/2025	Kimley»Horn © 2025 KIMLEY-HORN AND ASSOCIATES, INC. 6806 PARAGON PLACE, SUITE 310, RICHMOND, VA 23230 PHONE: 804-673-3882 WWW.KIMLEY-HORN.COM	Jacobs

Plotted By:McCray, Stephen Sheet Set:Kha Layout:CG-207 POST DEVELOPMENT DOWNSTREAM ANALYSIS November 06, 2025 01:46:46pm
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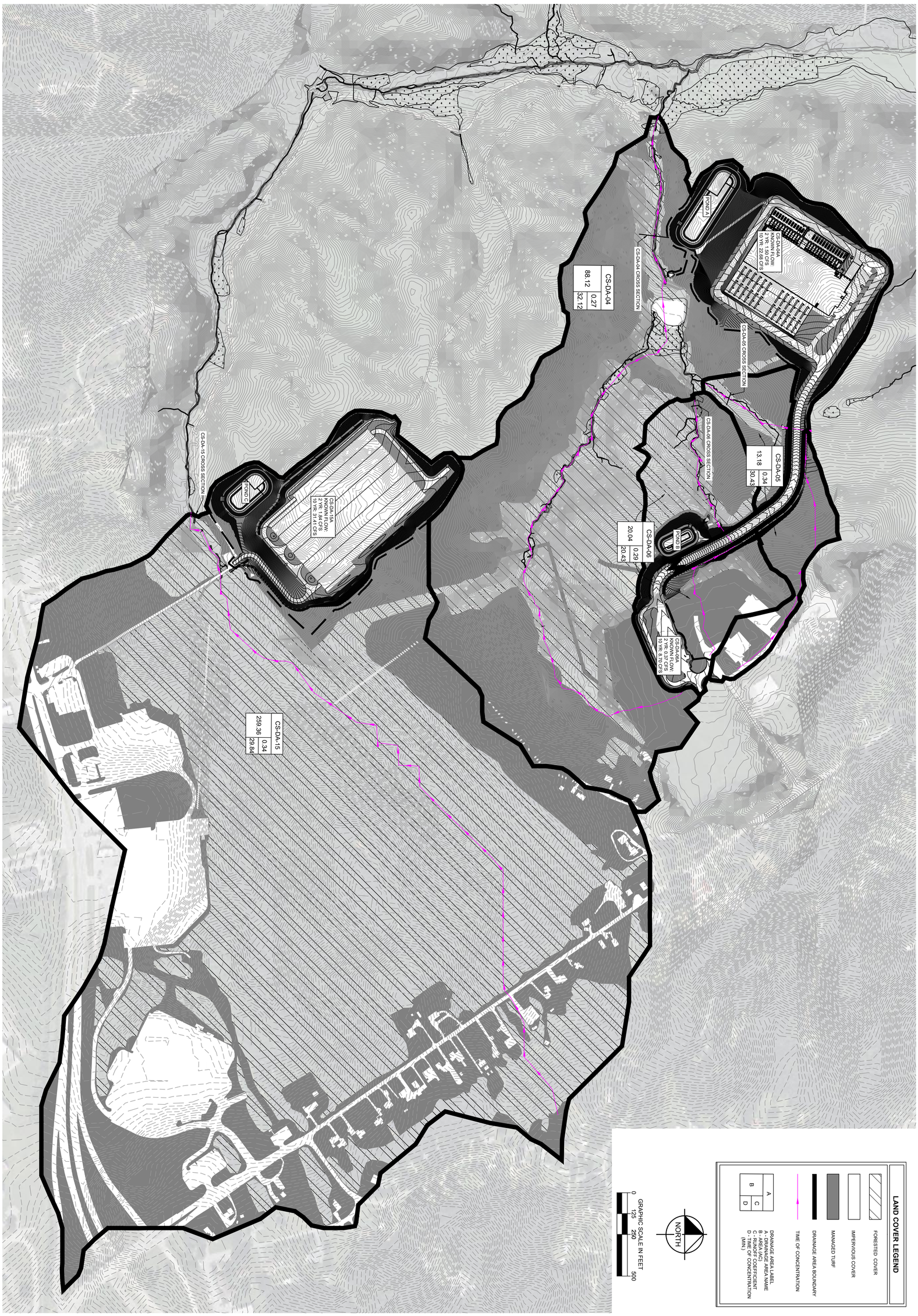

SHEET NUMBER
CG-207

PROJECT HERCULES

APPOMATTOX COUNTY VA

POST DEVELOPMENT DOWNSTREAM ANALYSIS

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	ECS
DRAWN BY	ECS
CHECKED BY	DW

COMMONWEALTH OF VIRGINIA
JOSH M MACDONALD
Lic. No. 0402027905
PROFESSIONAL ENGINEER
11/14/2025

Kimley»Horn

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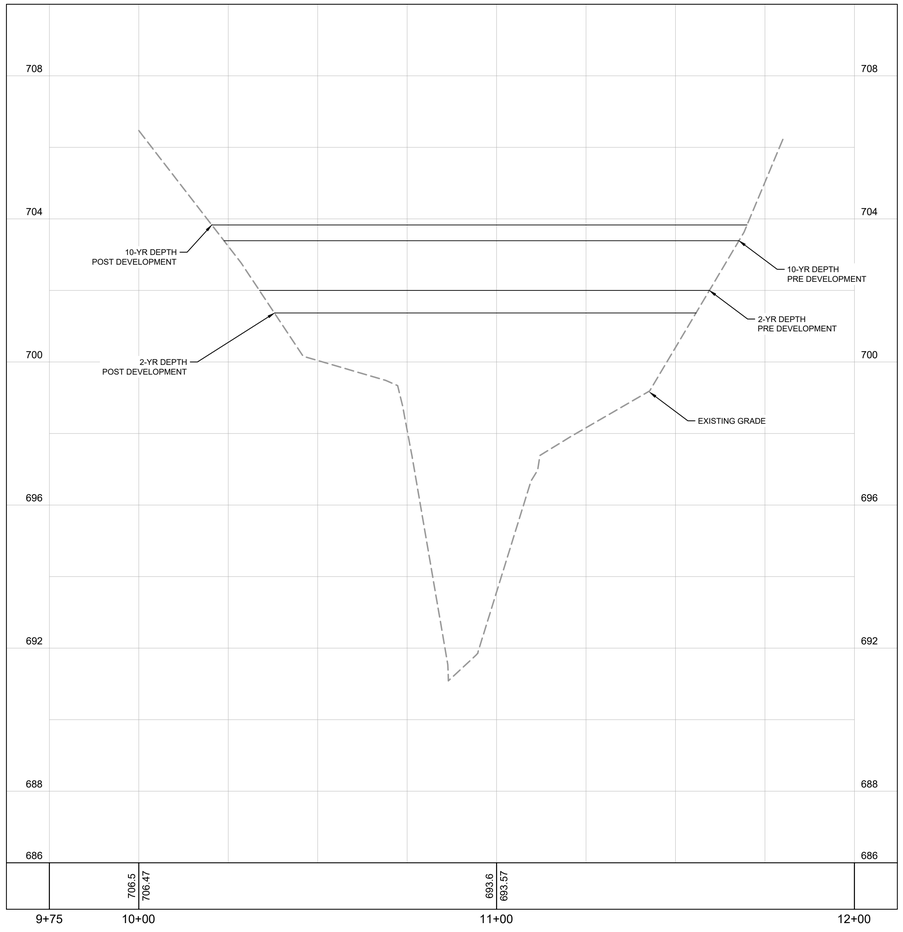
CS-DA-04 CROSS SECTION



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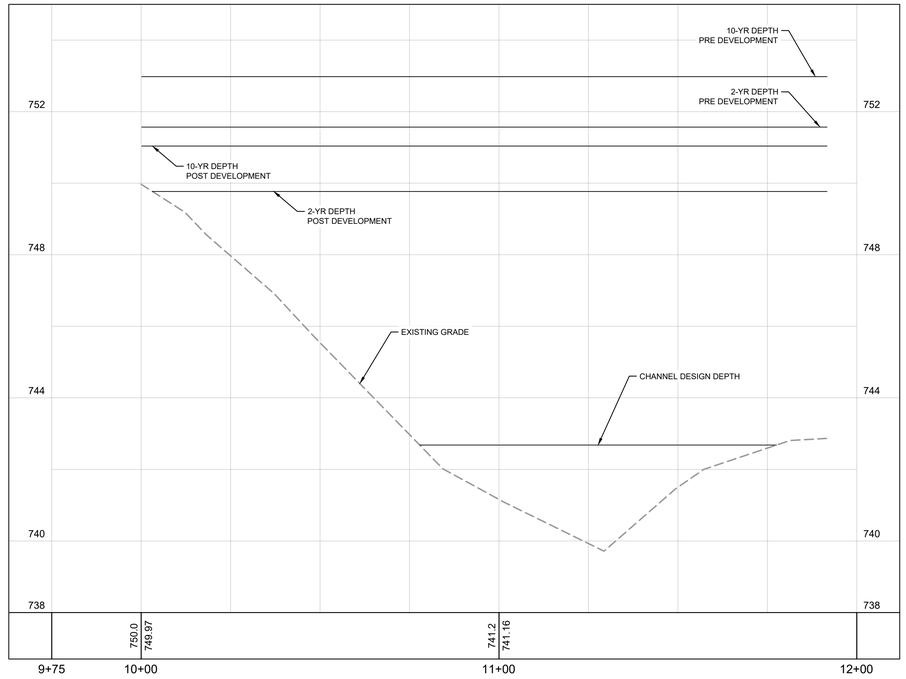

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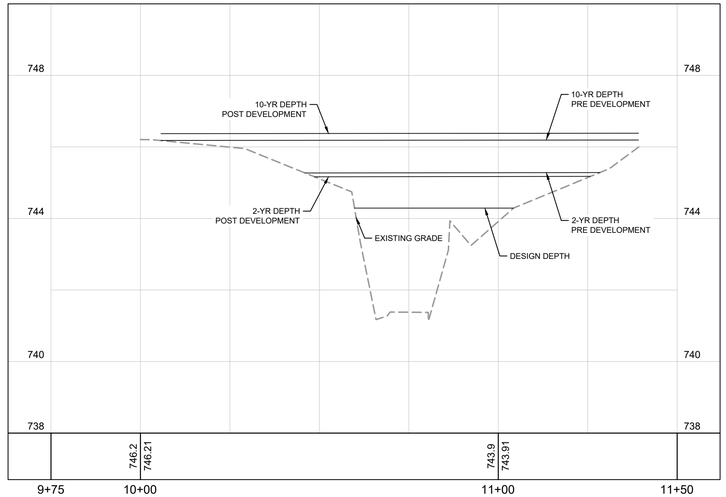

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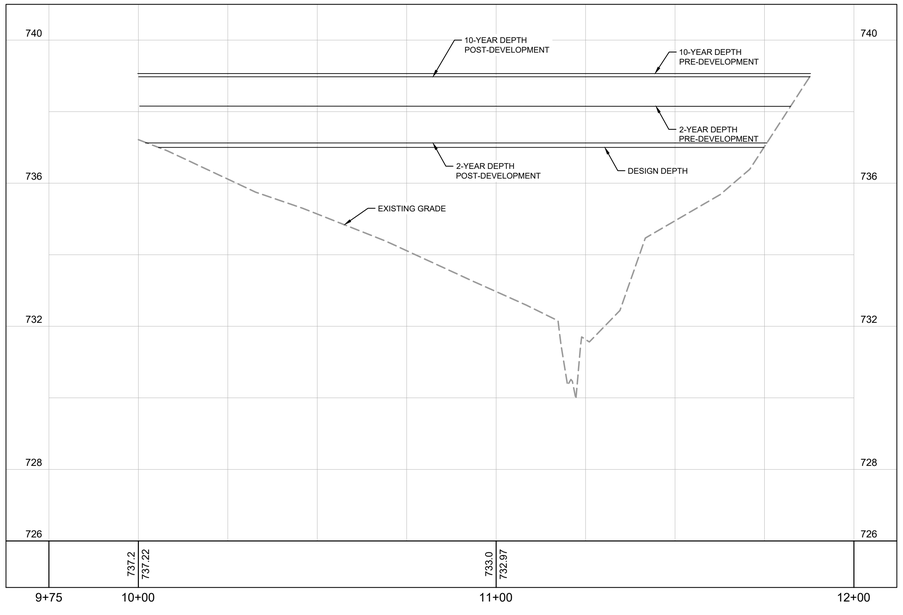

PRE DEVELOPMENT DOWNSTREAM DITCH CALCULATIONS

DITCH SECTION ID	DRAINAGE AREA	APPROX. LENGTH	C VALUE	TIME OF CONC.	I_2	I_{10}	Q_2	Q_{10}	SLOPE	MANNING'S N	BOTTOM WIDTH	SIDE SLOPES		DESIGN DEPTH	2-YR DEPTH	2-YR VELOCITY	10-YR DEPTH	Added On-Site Q_2	Added On-Site Q_{10}
												L	R						
	ACRES	FT		MIN	IN/HR	IN/HR	CFS	CFS	FT/FT		FT	FT/FT	FT/FT	FT	FT	FT/S	FT	CFS	CFS
CS-DA-04	103.64	4958	0.27	31.55	2.20	3.03	61.45	84.60	0.05	0.1	0.0	0.15	0.19	14.8	10.95	3.02	12.34		
CS-DA-05	15.23	2319	0.34	17.40	3.07	4.15	15.70	21.18	0.06	0.1	0.0	0.07	0.05	2.7	11.86	1.86	13.27		
CS-DA-06	21.36	1732	0.26	7.62	4.35	5.76	24.07	31.85	0.06	0.1	0.0	0.17	0.11	7.0	8.19	2.56	9.10		
CS-DA-15	273.24	4776	0.34	29.84	2.28	3.13	212.61	292.06	0.01	0.1	18.0	0.12	0.16	3.0	3.89	2.95	4.80		

POST DEVELOPMENT DOWNSTREAM DITCH CALCULATIONS

DITCH SECTION ID	DRAINAGE AREA	APPROX. LENGTH	C VALUE	TIME OF CONC.	I_2	I_{10}	Q_2	Q_{10}	SLOPE	MANNING'S N	BOTTOM WIDTH	SIDE SLOPES		DESIGN DEPTH	2-YR DEPTH	2-YR VELOCITY	10-YR DEPTH	Added On-Site Q_2	Added On-Site Q_{10}
												L	R						
	ACRES	FT		MIN	IN/HR	IN/HR	CFS	CFS	FT/FT		FT	FT/FT	FT/FT	FT	FT	FT/S	FT	CFS	CFS
CS-DA-04	88.12	4821	0.27	32.13	2.18	3.00	52.45	92.86	0.05	0.1	0.0	0.15	0.19	14.8	10.32	2.90	12.78	1.50	22.68
CS-DA-05	13.18	2319	0.34	30.43	2.25	3.09	10.20	14.02	0.06	0.1	0.0	0.07	0.05	2.7	10.06	1.68	11.33		
CS-DA-06	20.04	1883	0.29	20.43	2.83	3.83	16.84	31.03	0.06	0.1	0.0	0.17	0.11	7.0	7.16	2.34	9.01	0.37	8.70
CS-DA-15	259.36	1713	0.34	29.84	2.28	3.13	204.64	309.99	0.01	0.1	18.0	0.12	0.16	3.0	3.79	2.92	4.99	1.84	31.41

Plotted By: McCray, Stephen Sheet Set: Kha Layout: CG-208 DOWNSTREAM ANALYSIS CROSS SECTIONS November 06, 2025 01:47:20pm
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PROFESSIONAL ENGINEER
11/14/2025

KHA PROJECT	113706001
DATE	11/14/2025
SCALE	AS SHOWN
DESIGNED BY	ECS
DRAWN BY	ECS
CHECKED BY	DW

DOWNSTREAM ANALYSIS CROSS SECTIONS

PROJECT HERCULES

APPOMATTOX COUNTY VA

SHEET NUMBER
CG-208